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SURGICAL TREATMENT OF ULCERATIVE COLITIS.*

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At the present time, there are only two attitudes toward the treatment of ulcerative colitis that seem to be very generally accepted by the medical profession as a whole. The first of these is that treatment —both medical and surgical—is unsatisfactory and will probably remain so until the etiology of the disease is more definitely known.

The second attitude of the profession is that the patients had best not resort to operations, if they get along fairly comfortably without surgical interference. It is only fair to the medical men for surgeons to admit, at the present time, that surgery should only be employed as an aid in the medical management of these cases. Sometimes surgical aid is a life-saving procedure. However, in the majority of cases, it is usually a most disappointing effort, and unless mature judgment is employed, the patient's pitiful condition will be converted into a painful and hopeless existence, for which death is, too frequently, the only relief.

This brings us to the consideration of the most important aspect in the surgical treatment of ulcerative colitis, namely, the selection of those patients to whom surgery offers relief, and sometimes, possibly, a cure. In such a study, it is very dangerous to deal in generalities, for each patient presents so many different angles that demand intensive study, that generalities are apt to mislead us.

Amongst the various factors to be considered are the patient's surroundings, the ability and willingness to take and to continue taking sufficient and intelligent treatment.

In this investigation it is important that the surgeon be sufficient conversant with what constitutes "sufficient and intelligent treatment," to estimate, with the aid of the family physician, whether the patient has had the benefit of all the latest and best treatment obtainable, commensurate with her mental and financial ability to take the same.

When one visits clinics and hospitals in different parts of the United States, one will find two constant factors in all of the many advocated forms of treatment, namely, lots of rest in bed over long periods of time, and, second, a sustaining and well-considered diet having a low colon residue. Such being an accurate and undenied observation, forces one to the conclusion that these two factors are the main reliance on which all treatment must be based —in spite of the good reports concerning concentrated serum and vaccine treatment, vitamins and dietary deficiencies, neurogenic origins, etc.

I believe there is some value in all the treatments when properly directed by their own particular advocates, and, frankly, it requires enthusiasm on part of the doctor to stimulate these patients to continue, without a panic, a slowly improving situation. Then, too, the results of these various forms of treatment differ so markedly in different hands that if a patient decides to try any one of this list she should, if possible, go to the best equipped advocate of the form of treatment selected. Relatively few patients in our part of the country are so situated financially or otherwise that they can take such treatments away from home. In such cases it might be wise to study intensively that form of treatment which appeals to both the patient and to the doctor and fit such treatment as well as he can into the life of the patient who cannot remain away from home the required time. However, I feel quite certain that at the present time, rest and diet are the two mainstays for the

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average patient. Let us hope that our present active groping for a specific treatment will soon be marked with success.

In a recent visit to Chicago I was much impressed with the experience of at least one hospital group relative to the possible association of ulcerative colitis with amoeba. This group treats all of their cases of ulcerative colitis for amoeba whether the organism is found in the stools or not. They apparently have the feeling that amoeba is sometimes present, and yet its existence is not capable of demonstration by any laboratory methods known at the present time. As the treatment is relatively simple, and if intelligently administered, not harmful, it is employed in every case of ulcerative colitis before any operation is advocated. They report a few surprisingly good results by this simple method. The giving of emetine hydrochloride or one of the substitutes is at least a good therapeutic test for amoebic colitis—provided it is continued for a sufficient length of time, which seems to be not less than three months.

The differential diagnosis between ulcerative colitis and regional ileitis should be carefully made for the two conditions are clinically easily confused. The X-ray is of great aid, though I think we should remember not to depend on the X-ray interpretation of barium enema alone, but should watch a barium meal as it goes through the entire alimentary canal when given by mouth. However, a barium meal should not be given if the patient presents any suggestion of intestinal obstruction.

Our attention was recently focused on this point by a patient who was admitted to the hospital with the diagnosis of ulcerative colitis, and X-ray of the barium enema apparently confirmed that diagnosis. However, proctoscopic examination did not show the usual picture found in ulcerative colitis, and barium meal did reveal a regional ileitis.

Resection of a portion of the terminal ileum not only gave the patient relief, but the X-rays of the colon four months after operation showed what was apparently a normal bowel, when before operation it was most suggestive of ulcerative colitis.

As the results of delayed application of surgical aid until late in the disease have not been productive of many (if any) cures, naturally the question arises, would it not be more advantageous to the patient to resort to surgery at an earlier date than is now generally accepted? I am frank to state that I personally have no answer to this question for I have operated on only two such cases, and while both of them have done fairly well over a period of a few years, still there is no way of knowing as to whether they would not have been equally as comfortable with rest and a proper diet, and, at the same time, taking some form of treatment which would keep their minds occupied, for such is essential in any long continued disease. I am sure if I personally had ulcerative colitis that I would at the present time postpone any surgical interference as long as I could be made fairly comfortable without it.

In the ten-year period from 1920 to 1930 there were 1,193 cases of ulcerative colitis admitted to the Mayo Clinic, and, of this number, only eighty-two (82) received ileostomies. From a very recent visit to Rochester, I found at the present time that the percentage of ileostomies done is only about 2 per cent. As near as I can estimate, less than 10 per cent of patients admitted to hospitals throughout the United States are subjected to ileostomies.

As the disease apparently first makes its appearance in the rectum, it is interesting to note that no form of local applications (and most every drug has been tried) has seemed to be of any benefit. Frequently, in the course of the disease, peri-rectal abscesses, fissures, fistula-in-ano, etc., develop and such require and should have proper surgical aid. Occasionally an abscess appears in the abdominal wall, and naturally such requires incision and drainage. The same situation exists as regards deep abscess in the peritoneal cavity.

After all medical methods have failed and the decision reached that an ileostomy offers the patient his best chance, the patient should be properly prepared, both mentally and physically. I am sure the patient should be made conversant with the inconvenient and disagreeable features of a permanent ileostomy. The possibility of a successful restoration of continuity of the alimentary canal is so small that I do not think it is quite honest to withhold this information from the patient. I think he should also be conversant with the possibility, in fact, probability, of a colectomy having to be done in various stages following the ileostomy.

A few carefully matched and slowly given blood transfusions will often be of help in properly preparing the patient for operation. If one so desires he can fortify the peritoneal cavity against the extension of the infection by the employment of pre-

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operative intra-peritoneal injections of the vaccines or the sodium ricinoleate in 2 per cent (2%) solutions. I have had no experience with either of these agents, but I am certain extreme gentleness, and not examining the rest of the peritoneal cavity, are essential to the successful performance of an ileostomy.

Experience has taught surgeons that appendicostomy or cecostomy by themselves are of doubtful value.*

The most favorable site to make the ileostomy is as close as possible to the ileo-cecal valve. This point is located through a right rectus incision, and the intestine divided between clamps by means of a cautery. On account of the explosibility of ethylene, it is not used in these cases. The distal end of the bowel is invaginated through the ileo-cecal valve. The clamp is left on the proximal end and brought out at the lower end of the incision. If necessary, the mesentery is attached to the parietal peritoneum by means of a few No. 0 catgut sutures, and the incision closed around the intestine. After closure of the peritoneum, tincture of iodine is painted around the bowel. This aids in the early formation of adhesions between the intestine and abdominal wall, which will prevent retraction of the intestine back into the peritoneal cavity. No sutures are taken in the intestine.

If the patient's condition is good a stab McBurney incision is then made as far away from the ileostomy as it can be conveniently placed. The appendix and the whole lower end of the cecum is brought out of the incision after ligating and cutting the meso-appendix, iodine painted over the peritoneal surface of the exposed cecum and a clamp applied. If the patient's condition is not good, the cecostomy is postponed until there is improvement in the patient's condition.

These clamps are allowed to remain on the bowel for two or three days, depending on the condition of the patient's abdomen, especially as regards distention. Elevation of temperature or other signs of septic absorption also demand earlier removal of clamps. A metal clip across the bowel will be found to be more convenient than the clamp. The ends of the bowel are teased open and fecal material allowed to escape.

Before the patient leaves the hospital a colostomy bag is fitted to the abdominal wall. There are many such bags, but, as a rule, the patient finds that the simpler the apparatus the less discomfort he has. The one that has seemed most acceptable to our patients is a broad canvas belt that goes around the body and has a hole about four inches in diameter in it. This hole is located at the site of the ileostomy. Around this hole is sewed a steel ring. The patient is supplied with three to four little canvas "hats," the crowns of which have a diameter of four inches, and a rim around the crown of about two inches. The patient places the "hat" over the ileostomy, and then puts the crown of the "hat" through the hole in the canvas belt. The steel ring in this way presses the rim of the "hat" comfortably against the abdominal wall. Some toilet paper is put in the "hat" before it is placed over the ileostomy. In this way the patient stays reasonably clean and free from odors. If the "hats" are soiled they can be washed as frequently as necessary.

As time goes on the character of the stools becomes more solid and, therefore, somewhat easier to handle.

Cattell, at a recent meeting, expressed the opinion that a subsequent colectomy hastened the appearance of solid stools. After an ileostomy, especially in acute cases, it is very important to maintain the blood chlorides, for there is always a marked loss of fluids. The blood chloride level can best be maintained by continuous intravenous injections of saline. Dextrose is also added to the saline to assist in preventing starvation.

The patient should be instructed to occasionally dilate the opening in ileostomy, especially if generalized abdominal pain is present several months following the operation. The patient simply dilates the opening with the finger, and this will sometimes prevent the scar tissue from contracting too much around the ileostomy.

The next question to be considered with the patient who has an ileostomy and whose general condition is improving would naturally be the consideration of the possibility of restoration of bowel movements through the anus. The axiom—"Once an ileostomy, always an ileostomy"—about expresses the generally accepted attitude of surgeons throughout the country. However, it is reasonable to pre-

*In the February, 1936, issue of the *Archives of Surgery*, Dr. Carl A. Kunath, of Iowa City, reports a series of cases in which appendecostomy and cecostomy with subsequent irrigation has proven a useful procedure in selected cases, especially those cases of "moderately severe chronic colitis."

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sume there must be some cases in which the large bowel has returned to a condition that is so near normal that an anastomosis of the small intestine into some part of the colon can be safely done. Certainly such an anastomosis should not be considered until proctoscopic examinations of the rectum, and repeated X-ray examinations have demonstrated a near normal condition of the large bowel to have existed below the selected point of the anastomosis for at least three (3) years and without any bloody discharge from the rectum. In other words, if the colon can be proven to have been quiescent for at least three years, then such anastomosis might be considered.

In the majority of these cases that have had an ileostomy, a removal of all or part of the colon should be given serious consideration for the following reasons:

1. The presence of an infected bowel continues to be a possible focus of a general infection as long as it remains. Some cases of infectious arthritis, which continued to exist after an ileostomy, have been reported cured by colectomy—both partial and complete.

2. Not infrequently the ulcers in the colon perforate and produce a fatal peritonitis even after ileostomy.

3. The possibility of the continuation of the ulceration may prove to be an etiological factor in the causation of future malignancy.

4. The possibility of an over-looked but existing carcinoma.

5. Extensive polyposis of the large bowel which can only be cured by excision of the colon.

6. Frequently these ulcers heal with stricture formation and, if two such strictures are produced, the segment of bowel between them is apt to produce an isolated loop which becomes the source of an infection.

The reasons we advocate a cecostomy in association with or soon after the ileostomy are:

1. If a stricture forms in any portion of the colon distal to the ileo-cecal valve, a cecostomy allows the escape of material that would otherwise be isolated. For the same reason, some surgeons have advocated the cutting of the sphincter muscles of the rectum to assist in the escape of material which might otherwise be retained. However, we have had no experience with this practice, for we feel that the muscles will relax when desired with very little stimulation from the retained material and thereby prevent the soiling of clothes.

2. By giving irrigations through the cecostomy and allowing the solution to run out of the rectum, and also giving the solutions in the rectum and allowing them to come out through the cecostomy helps to clean the colon, and thereby makes the various stages of the subsequent colectomy safer. If X-rays before operation show any marked definite stricture the irrigations should not be given for fear of traumatizing the colon. If irrigations seem to cause any elevation of temperature, they should be discontinued for fear such might stir up a somewhat latent abscess.

Of the various antiseptics employed, acriflavine seems to be the most acceptable.

There is an old surgical axiom, "The peritoneal cavity once insulted is hard to insult again," and it is our belief in this axiom that furnishes an additional reason for our not advocating substances injected intraperitoneally in preparation of operations on the colon. In other words, we feel the preliminary ileostomy furnishes sufficient "insult" to the peritoneum to stimulate it into the manufacture of its own defensive processes.

The removal of the colon should be planned in stages based on the estimated resistance of the patient, and a careful study of the X-ray films before operation, as well as actual response of the patient during the progress of the operation. It is well to plan the operation in stages so that operative procedures can be stopped quickly if the patient's condition unexpectedly indicates the expediency of such action.

As a general rule, if a complete colectomy is to be done, it should start on the right side with removal of the ascending colon and proceed by stages, depending on the ability of the patient's response to each step of the operation.

While it is not necessary to remove as much of the mesentery as is done with malignancies, still in many cases the small abscesses and infected areas resulting from chronic perforations force wide excisions of the mesentery.

The peritoneum on the outer leaf of the colon should be incised first and, by rolling the bowel toward the mid-line, the vessels will be easily exposed. After removal of the segment of colon the

two cut leaves of the peritoneum should be approximated by catgut sutures so as to try to prevent adhesions.

Every care should be exercised to preserve the omentum. This can usually be done by not interfering with its gastric attachment.

Often it is good judgment to resort to the Mikulicz type of resection if it has been decided to remove only a portion of the colon instead of doing a complete colectomy.

The implantation of the distal loop of the colon in the abdominal wall after each stage in the multiple resections, as suggested by Cattell, is an excellent safeguard against peritonitis, and retention of colon contents. The last stage should be the abdomino-perineal resection of the rectum. In most cases it will be found to be impossible to invaginate the rectum. This should be done if possible, but I feel the pelvis should be drained in every such case. Failure to drain will often allow a fatal peritonitis to develop.

Rankin has employed fulguration in the rectal stump in the radical cure of adenomatosis and pseudopolyposis and reports gratifying results "particularly after the fecal stream has been sidetracked."

In these extensive ulcerative colitis cases in which the cecum and sigmoid have been removed, and the patient's condition is none too good, it might be well to consider fulguration of the remaining rectal stump. I have not had an opportunity to do so since the publication of Rankin's paper in the October issue of *Annals of Surgery*.

If fulguration of the rectal stump would cause the infection to cease and the walls of the rectal stump would return to any condition approaching normal, the anastomosing of the ileum into the remains of the rectum might be possible. However, I think this is only a very remote possibility.

Various attempts have been made to implant the ileum through the rectal sphincter after removal of the rectum, but none of these have proven satisfactory as far as I know. Certainly an artificial anus on the abdominal wall, which can be cleaned by sight, is more apt to be less offensive than an opening in the rectal region which does not have perfect sphincter control, and such is not apt to be present, especially if there has been much peri-rectal infection.

However, I very much doubt if any of us will ever see any surgical treatment so successful that it will permit of the restoration of the fecal stream into a rectum which has been definitely involved, and to do so with a sufficient degree of certainty to justify the adventure.

In these very desperately ill cases of ulcerative colitis, blood transfusions are not only helpful in preparation of the patient for operation, but also in sustaining the patient after operation.

Finally, to summarize the situation briefly, I feel there are three questions to be considered, and, as yet, the answers to these three questions are unknown.

1. How can surgery be made to be of more aid to the physician in the medical management of these cases?

2. Should ileostomies be done at an earlier date and before all hope of the colon ever returning to normal is gone?

3. Will fulguration or some other form of treatment of the rectal wall allow this portion of the alimentary tract to return sufficiently to normal to justify the reestablishment of continuity of the fecal stream?

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THE RESULTS OF ROENTGEN TREATMENT OF SOME VERY ADVANCED MALIGNANCIES.*

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The treatment of skin cancer has changed greatly during the past few years. For some time it has been generally known that small basal cell lesions could be destroyed by the rays of the roentgen-ray or radium without permanent damage to the normal structures. Larger lesions and epidermoid carcinoma were considered recalcitrant to the rays of the roentgen-ray or radium. Many experienced radiolo-

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gists were, however, during this time curing the large basal cell lesions and many of the epidermoid ones. Grade one and two squamous cell lesions were still considered radio resistant. Again a few radiologists proved these could also be cured by irradiation.

by a visible enlargement of an ulcerating, fungating, foul-smelling, painful, tissue and bone destroying lesion.

The small basal lesion can almost always be cured by proper treatment. It should never be consid-

CASE I.

Fig. 1.—Advanced, grade 2 squamous cell carcinoma on the lip with fixed, enlarged cervical glands.

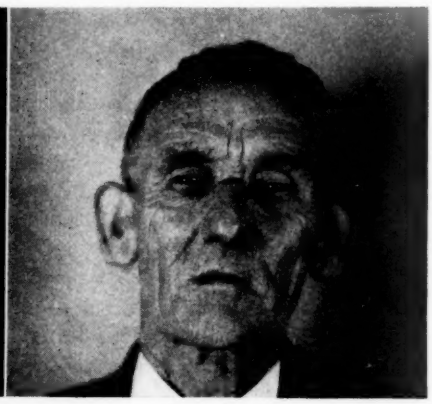

Fig. 2.—Treated more than five years ago, there has been no recurrence.

One of the most horrible of all diseases is the very advanced basal cell cancer. A great mistake has been made for many years in considering them more or less benign growths which rarely metastasize It slowly crushes the spirit of the most courageous

ered a more or less benign condition, and every one treating these cases has a great responsibility to his patient and to himself. I have several terminal cases under treatment now who could have been easily cured several years ago. Through improper

CASE II.

Fig. 1.—Extensive basal cell lesions, one in the temporal area being firmly attached and one on the nose having partially destroyed the right wing of the nose including the cartilage.

Fig. 2.—After three years, there is no evidence of recurrence.

CASE III.

Fig. 1.—Squamous cell carcinoma—Grade 3—very advanced and firmly attached to the underlying bone. 5-17-35.

Fig. 2.—After Roentgen treatment: The immediate results are good and will, we believe, be permanent. 1-28-36.

CASE IV.

Fig. 1.—Very large, firmly fixed, inoperable basal cell lesion which involves the cartilage of the ear and periosteum over the mastoid. Paste and radium had been applied previously elsewhere. Treated May, 1933.

Fig. 2.—At the present time, 1-28-36, there has been no recurrence of the disease.

treatment they are now horrible sufferers with no possible hope of a cure by any means or method known today.

Until the past few years growths which involved cartilage or bone to any extent were considered hopeless, unless a radical operation could remove the entire involved area. Now through the use of more filtration and more penetrating rays many of these can be cured. It has been definitely proven that young cells are more radio sensitive than older cells of the same type.

Instead of giving one, two or three heavy doses of unfiltered low voltage roentgen rays, heavily filtered high voltage rays are applied daily for from two to four weeks or longer. In this way much larger doses of the rays can be put into the cancer without permanent damage to the skin and surrounding structures, and the individual cells can be affected in their more sensitive stages of development. In many others, of not such an advanced stage, a cure can be obtained without the very mutilating operations of the past. In some the cancer cells can be destroyed and a plastic operation done later when the entire procedure surgically would be impossible, on account of the large area of the body surface involved by the carcinoma.

Biopsy should be done mainly for a correct diagnosis, and in a small percentage of cases to direct the type of treatment. In my experience the large majority of skin cancers should have all the irradiation the tissues will stand, regardless of the type of cancer or the grade of malignancy. The pathologist's grading helps in a small percentage to determine the attack upon the surrounding lymphatics. As a rule, in basal cell and in grade one and possibly grade two epidermoid carcinoma treatment of the surrounding lymphatics can probably be dispensed with. This rule does not always hold good, and a careful examination of the surrounding lymphatic areas is necessary.

CASE V.

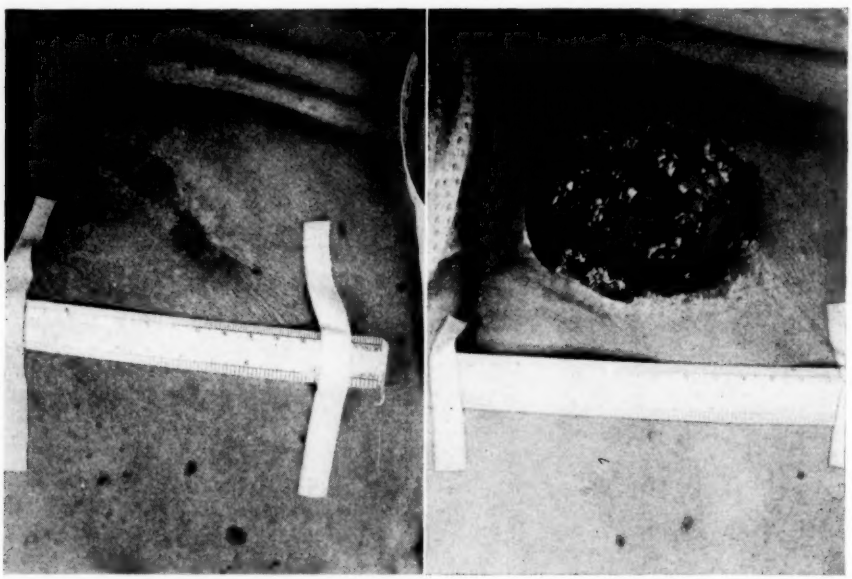

Fig. 1.—Man—age 73—first seen September, 1934. An advanced, grade 2, squamous cell carcinoma of the left breast with a large mass in the upper outer quadrant and definitely enlarged axillary glands. The mass was absolutely fixed and inoperable.

Fig. 2.—At the present time, twenty months after treated, no evidence of malignancy can be found and the tissues are freely movable.

Every one experienced in this field knows that some basal cell lesions are of the mixed type, and others for reasons unknown at the present time are far more radio resistant than many epidermoid carcinomata.

SUMMARY

1. Through the use of heavily filtered 2 mm. of copper or more roentgen-rays at high voltages 200

KV or more, many cases of carcinoma of the skin and more or less superficial tissues previously considered hopeless can now be cured.

2. Biopsy is important and necessary, but, regardless of the type or grade of malignancy, all of the irradiation that the normal surrounding tissues will stand should be administered.

3. Grade three and four epidermoid carcinoma means that the surrounding lymphatic areas should always be treated, but the reverse of this rule does not always hold good for basal cell and grade one and two epidermoid cancer.

4. Basal cell cancer should never be considered a more or less benign condition since in the advanced stages it is the most horrible and hopeless of all carcinomata.

DISCUSSION

DR. VINCENT ARCHER, University: Dr. Hodges has covered this field very, very well. There are just one or two features that I should like to emphasize or reiterate. The first is the question of microscopic examination. I think those of us who are dealing with cutaneous malignancies know that even though the slide shows a predominance of basal cells the lesion cannot be considered entirely as a basal-cell lesion, because many of these have either squamous or transitional cells along with the basal cells. If the lesions having transitional cells in them are treated on the basal-cell basis, then you will have the most radio-resistant cells remaining. Then the lesion is going to be most resistant to radiation, and you will have to pump into it all the radiation you can.

As to curing cases with bone involvement, whenever we get cases with bone or cartilage involvement the problem of radiotherapy is made much more difficult. To get rid of the cancer in the bone you will get a lot of scarring and deformity afterwards, with bone necrosis, which must be cared for surgically.

I do not think there is much left to say but to again reiterate that you should treat all of these skin lesions as though they had radio-resistant cells in them and pump in whatever dosage the skin will tolerate.

DR. J. SHELTON HORSLEY, Richmond: This is an extremely interesting phase of cancer work and one in which Dr. Hodges has obtained some very brilliant results. Those of us who are interested in cancer will applaud such advances, because the important thing is not so much how the patient is cured as the fact that there is a cure. Undoubtedly some of the cases which Dr. Hodges has shown would be inoperable or would certainly have recurred, if they were not made worse by surgical operation. If any cutting is done, it should be done by the endotherm knife or with the hot electric cautery. Roentgenology is the method of choice in these cases such as he has shown.

In early skin lesions, where the skin can be brought together, excising the cancer with the endotherm and closing the wound with a few sutures may be preferable; but certainly where the lesions have become advanced X-ray therapy is the treatment that should be used.

There are many types of basal-cell cancer. Even the very extensive ones do not metastasize. There is some reason for that. It is not because the cells are large, for the cells of basal cell cancers are usually smaller than in the squamous-cell type. We have reason to believe that they may enter the lymphatics just as the other cells do. But it seems that there must be some preparation for them, something that prepares the ground before basal cells can grow. In this type of lesion when extensive, I have been transplanting tissue from a distance, after excising the cancer with electric cautery, and not cured by radiologic treatment, because there seems to be some inhibiting substance in tissue at a distance from the lesion. I have never seen a basal-cell cancer involve a flap transplanted from a distance, though it may recur near its margin.

Not infrequently, as Dr. Archer says, there is a mixed type of lesion, with squamous cells among the basal cells, which may be called metastasizes.

We must remember, too, that the technic with the new X-ray machines has changed, and it is possible to do now with roentgenology things that were not possible several years ago.

Again I want to warn against the use of X-ray, either for gastro-intestinal diagnostic purposes or for therapy, by those who have not had the proper training in roentgenology. Undoubtedly poor or insufficient treatment at first will seal that patient's fate and prevent good treatment later from having any effect.

DR. HODGES, closing the discussion: As to these small basal cell lesions, the point that I want to emphasize again about them is this: In the early stages, if they are cut out or burned out, or what not, they can be cured. But, on account of the fact that all pathologists tell you that this is a more or less benign lesion and that it is usually called rodent ulcer, they are not looked upon by the majority of the profession as real cancer. But it is a real cancer and is the worst of all cancers if you let it get away from you. Sometimes we see people with the whole side of the face gone, and in a perfectly horrible condition, who could have been cured if treated earlier. So it should be looked upon just as seriously as squamous-cell cancer.

Another point: In skin cancer, where you can see it, and in rectal cancer, where you can see it and feel it, and in laryngeal cancer, where you can see it, we still have a very heavy mortality. We still see many of these people in an absolutely hopeless condition, where they should have been diagnosed early. Cancer in some parts of the body is going to elude us for a long time yet, but certainly in those parts of the body where the surgeon or radiologist can and should see them we should be able to make the diagnosis in the early stages.

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SOME OBSERVATIONS ON THE SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS.

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and
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There have been numerous surgical procedures proposed and tried in the treatment of pulmonary tuberculosis. The principal ones which are in general use today are artificial pneumothorax, thoracoplastic operations, and phrenic nerve operations.

ARTIFICIAL PNEUMOTHORAX

Forlanini of Italy first induced artificial pneumothorax in a patient in 1892. He had been advocating this procedure since 1882, but did nothing more than discuss it, with the exception of a few cases in the late '80's where he had aspirated pleural effusions and had replaced some of the fluid with air, but did not follow up the treatment.

In 1898, Dr. John B. Murphy, Chicago surgeon, not knowing of Forlanini's work, started artificial pneumothorax on a few cases. Murphy was well satisfied with his results, and in the same year reported his work at the June meeting of the American Medical Association in Denver, Colorado. Following this report he apparently lost interest and did no further work on the subject. However, it was carried on for a while by his pupil and associate, August F. Lemke, but owing to the death of Dr. Lemke in 1906, the treatment in this country was practically abandoned for a few years.

In 1912 the joint papers by Hammond and Sloan of Baltimore, and one by Dr. Mary E. Lapham of North Carolina, were the first to be read on pneumothorax before the National Association for the Study and Prevention of Tuberculosis. Following these papers a wave of enthusiasm spread over the country, and the treatment was instituted in practically all the well-regulated tuberculosis sanatoria in the United States.

In the majority of institutions at that time no X-ray facilities were available, and the selection of cases was based almost entirely on the study of the physical signs and symptoms. It was believed in these early days that in order to be suitable for this treatment the patient should show evidence of clinical activity in only one lung. It was feared that after compression of a diseased lung the increased work placed on the contralateral lung would be likely to spread any active clinical disease that may have been present in it.

Drs. Kennon Dunham and C. S. Rockhill, of Cincinnati, in a paper in 1913 emphasized the importance of the use of the X-ray in studying the degree of collapse being obtained in those cases already under compression therapy.

It had been further demonstrated by those using this method that compression of the lung with artificial pneumothorax would usually control even the most severe pulmonary hemorrhage if administered in time. Also, it was found that cases with cavity formation, or an extensive lesion in one lung and a moderate amount of involvement in the contralateral lung, could often be benefited by the compression of the badly diseased lung when the collapse was induced to control hemorrhage. Furthermore, it was noted that if this class of patients were kept at complete rest in bed for a period of several months the moderately advanced lesion in the contralateral lung would frequently improve or clear up.

With the increasing use of the X-ray in selecting cases suitable for pneumothorax in those days, and following them up after this treatment had been instituted, it gradually dawned on the minds of phthisiologists that induced pneumothorax could be beneficially administered to a much larger percentage of patients than had been previously believed.

THORACOPLASTIC AND PHRENIC NERVE OPERATIONS

Thoracoplastic and phrenic nerve operations are not particularly new in origin, but the technique has been greatly developed in the last few years, and positive indications for these operations have become more definitely known.

As far as we can ascertain the first operations

undertaken to compress the tuberculous lung by a thoracoplastic operation on the overlying bony cage were performed by de Carenvilla of Lausanne in 1885. Later pioneering operations were done by Quincke, and more recently by Brauer and Friedrick (1907). The procedures were modified by Wilms and Sauerbruch who deserve the credit for the development of the modern paravertebral thoracoplasty as is used today.

In regard to the phrenic nerve operations it was found that Stuertz, in 1911, proposed paralyzing the diaphragm on one side to relax a diseased lower lobe. In 1913 Sauerbruch independently reported five cases in which phrenicotomy was done with marked benefit. In the same year Schepelman suggested phrenicotomy for early pulmonary tuberculosis. In 1922 Felix and Goetze suggested radical phrenicotomy, this being a procedure to interrupt the accessory branch or branches of the nerve. In the last few years temporary phrenic paralysis (phrenic crushing) has almost superseded the permanent type of operation.

INTERNAL PNEUMONOLYSIS

Jacobeus, in 1913, devised an instrument called a thoracoscope to divide intrapleural adhesions in pneumothorax cases. The instrument consisted of two parts which were introduced separately in the intercostal spaces; the mirror and light being introduced at one point and the galvano-cautery being introduced from another point. This instrument was later modified by Davidson, Matson, Cutler, and others, the modification consisting of the substitution of a single puncture instrument for the two puncture one, and the substitution of high-frequency current for the galvano-cautery.

Many cases of artificial pneumothorax are complicated by these intrapleural adhesions, and they often prevent the proper collapse of cavities and other diseased portions of the lung. When the adhesions can be severed by the above-mentioned procedure, much better therapeutic results are generally obtained from the pneumothorax treatment.

The indications for the compression of a tuberculous lung by artificial pneumothorax, or other surgical procedures which have been mentioned are:

1. Progressive minimal disease.
2. Progressive moderately advanced lesions, or moderately advanced lesions with definite cavity formation with positive sputum.
3. Far advanced tuberculous disease with the major portion of the involvement in one lung, with or without positive sputum.
4. For the control of severe hemorrhage in any stage of the disease when the lung from which the hemorrhage is coming can be definitely ascertained.

The above indications are, of course, general in character, and each case which comes under observation should be considered on its own individual merits and indications.

In order to show our progress in the use of compression therapy as an adjunct to the treatment of patients who come in our care, three tables are given as follows:

TABLE I

PATIENTS DISCHARGED FROM BLUE RIDGE SANATORIUM WHO HAVE RECEIVED SURGICAL THERAPY FOR THE PERIOD JULY 1, 1930, THROUGH JUNE 30, 1935

	NON-TUBERCULOUS	"SUSPICIOUS"	MINIMAL	MODERATE	FAR ADVANCED	TOTAL
Pneumothorax	0	0	5	87	104	196
Pneumothorax with Pneumonolysis	0	0	0	14	20	34
Temporary Phrenic	0	0	0	5	11	16
Permanent Phrenic	0	0	0	10	33	43
Partial Thoracoplasty	0	0	0	2	3	5
Complete Thoracoplasty	0	0	0	0	11	11
Total Discharges	45	255	192	438	505	1,435

Of the 1,435 patients who were discharged in the above period, you will note that 45 were diagnosed as non-tuberculous and 255 as "suspicious" of clinical tuberculosis, making a total of 300 which is deducted from the grand total of 1,435, leaving 1,135 diagnosed as positive cases of pulmonary tuberculosis. Of this number 26.87 per cent were treated with some form of surgical lung compression.

XUM

TABLE II

CENSUS OF SURGICAL WORK DONE ON THE ADULT PATIENTS IN THE SANATORIUM AT THE BEGINNING OF THE PRESENT FISCAL YEAR, JULY 1, 1935

On July 1, 1935, we had in the Sanatorium:

I. PNEUMOTHORAX

No. Cases—98, or 43.2 per cent of the adult patient body.

17 of the 98 patients had had internal pneumonolysis.

II. PHRENICS

No. Cases—21, or 9.2 per cent of the adult patient body.

12 of this number had temporary phrenics and the remaining 9 had permanent phrenics.

III. THORACOPLASTIES

No. Cases—3, or 1.3 per cent of the adult patient body.

1 of these 3 cases had a partial collapse and the other 2 had complete collapse.

SUMMARY

Of the total 227 patients occupying adult beds on July 1, 1935, 57 were classified as "suspicious" or non-tuberculous, leaving a net total of 170 which could be positively diagnosed as having active, clinical tuberculosis. Of this number 122, or 71 per cent, were receiving some form of surgical treatment for compression of the lung.

TABLE III

PATIENTS DISCHARGED FROM BLUE RIDGE SANATORIUM WHO HAVE RECEIVED SURGICAL THERAPY FOR THE SIX-MONTH PERIOD, JULY 1, 1935 THROUGH DECEMBER 31, 1935

	NON-TUBERCULOUS	"SUSPICIOUS"	MINIMAL	MODERATE	FAR ADVANCED	TOTAL
Pneumothorax	0	0	2	21	16	39
Pneumothorax with Pneumonolysis	0	0	0	6	3	9
Temporary Phrenic	0	0	3	3	6	12
Permanent Phrenic	0	0	0	3	5	8
Partial Thoracoplasty	0	0	0	1	1	2
Complete Thoracoplasty	0	0	0	0	1	1
Total Discharges	5	40	19	54	40	158

Of the 158 patients who were discharged in the above six-month period, you will note that 5 were diagnosed as non-tuberculous and 40 as "suspicious" of clinical tuberculosis, making a total of 45, which is deducted from the grand total of 158, leaving 113 diagnosed as positive cases of pulmonary tuberculosis. Of this number 62.83 per cent were treated with some form of surgical compression.

It is our practice to offer compression treatment to every patient admitted here whom we think would be benefited by it. In some instances this treatment is refused and the patient is only given general rest treatment. Other cases are admitted who, in our opinion due to extensive bilateral disease or for other reasons, are not suitable for compression treatment, but who after complete rest may sufficiently improve in one lung to justify some type of compression in the opposite side. In some patients the improvement takes place in the Sanatorium, and in others the disease does not show sufficient healing to make it safe to institute compression treatment until after discharge from the Sanatorium and until rest has been continued for a while at home.

It will be noted from the above tables that there has been a definite increase in the percentage of patients who have come under our care during the past five years, who have received some form of compression therapy.

The cases of childhood type of tuberculosis and "suspicious" cases are not included in the percentages, for compression is not indicated in these types of patients.

A word in regard to the classification of "suspicious" cases may not be amiss at this time. Many of our best diagnosticians are showing an increasing interest in the diagnosis of early tuberculosis, and are sending patients to the Sanatorium for treatment who have symptoms of early disease, but whose lesions in the lungs are not clearly enough defined to make a positive diagnosis of minimal tuberculosis. However, the majority of these cases have definite pathological changes of a questionable nature that may be found on physical examination, or more often by X-ray examination. We have felt it advisable to give such patients a period of treatment in order

possibly to prevent a further development of the disease, and to teach them the precautions necessary to prevent a breakdown in the future. We have seen numbers of so-called "suspicious" cases who did not take the necessary care of themselves break down in later years with active tuberculosis.

The question of the proper time to discharge patients from the Sanatorium whose symptoms have been ameliorated by the use of compression therapy but who need further treatment is one to which we have given a great deal of study. There are a few clinics in the United States which have been doing an extensive amount of surgical compression on their tuberculous patients and returning them to their homes at an early date after their symptoms have subsided. In order to get the opinions of some of the outstanding chest specialists, we have during the past year sent the following questionnaire to several of the most experienced men in tuberculosis work in the United States:

"1. During the last fiscal year what percentage of your pulmonary tuberculosis patients received artificial pneumothorax?

"2. Do you advocate the brief training of general practitioners for the purpose of administering artificial pneumothorax in their offices, and discharge your patients to receive treatment from this source?

"3. Do you believe that patients should be treated with artificial pneumothorax and return to their usual occupations within from one to three months after compression has been established, and for them to receive the treatment thereafter from whatever local practitioner who may have equipped himself to give this treatment at his office?

"4. What is your opinion of the relative value of sanatorium training and treatment of patients suffering from pulmonary tuberculosis as compared with home training and treatment."

I am giving below their replies to these questions.

F. M. POTTENGER, M. D., Associate Professor of Clinical Medicine, University of Southern California. The Pottenger Sanatorium and Clinic, Monrovia, Calif.

"1. During the past year we had about 20 per cent. This is a very high percentage for us, but it has been due to the character of the material that has come to the Sanatorium. During the depression we have had a larger percentage of severe cases than is usual. Prior to the depression our percentage ran about 5—7 per cent.

"2. No patient should be discharged to receive treatment under a general practitioner unless he does understand the work. * * * If he is able to do it well, all right; but I look upon the treatment of tuberculosis as much more serious than just putting a little air into the chest.

"3. * * * Expediency may drive one to do this, but it will not give the greatest number of good results.

"4. I do not think there is any comparison between sanatorium treatment and home treatment. * * * I find that where patients are under my immediate control and where I am responsible for their acts I can do so much better than I can when they are surrounded by well people and where I am compelled to make suitable accommodations for them among those who are living lives that are diametrically opposite to the life the patient must live to get well. It can be done, but I find that as a rule those who are convinced of its value are those who have never had the opportunity to know what isolation and control of the patient in a proper institution means."

VICTOR F. CULLEN, M. D., Supt., Maryland Tuberculosis Sanatorium, State Sanatorium, Md.

"1. Twenty-five per cent.

"2. I think there should be treatment stations scattered all over the State and there should be a trained man able to administer pneumothorax in these stations.

"3. I do not believe the patients should be sent back to their occupations in three months. You will find some men in Michigan and Minnesota who are doing this way, and personally I feel persons should have just as good care to take cure whether they receive pneumothorax or whether they do not, and they should have sanatorium treatment and have the lung well under compression when they are sent out. I do not feel it is a good thing to start patients on pneumothorax in the doctor's office.

"4. My opinion is that each patient suffering from pulmonary tuberculosis should have at least two or three months training in a Tuberculosis Sanatorium before they attempt to go back home."

JOSEPH WALSH, M. D., 521 Medical Arts Bldg., 16th and Walnut Streets, Philadelphia, Pa.

"1. Nine per cent.

"2. No.

"3. No.

"4. * * * All patients are undoubtedly treated more easily and more satisfactorily in a sanatorium. * * *

GERALD B. WEBB, M. D., Past President of National Tuberculosis Association, 23 E. Pikes Peak Avenue, Colorado Springs, Colo.

"1. Can not give you percentage, but on account of the complications which can arise we are very conservative in administering artificial pneumothorax. We still feel that prolonged bed and postural rest, or shot bags if disease is bilateral, the first remedy.

"2. No, decidedly not.

"3. No. Whatever collapse therapy is employed it takes several years for the patient to recover. Our best results have always been obtained by bed rest.

"4. Sanatorium treatment is by far the best. With a few sensible people home treatment has been successful."

WILLIAM H. ORDWAY, M. D., Physician in Charge, Metropolitan Life Insurance Company Sanatorium, Mt. McGregor, N. Y.

"1. Twenty-nine per cent of fifty-five tuberculous admissions during 1933 received artificial pneumothorax.

"2. I believe that the institution and continuance of artificial pneumothorax for the treatment of pulmonary tuberculosis should be confined to men specializing in this field. Complications and decisions as to its administration can only be successfully handled by those who are constantly interested in this type of work.

"3. It is our opinion that artificial pneumothorax is simply an adjunct to the treatment of pulmonary tuberculosis in a sanatorium, and unless the local practitioner has had some training in sanatorium treatment it offers a considerable hazard to the patient.

"4. It is my opinion that with a few rare exceptions, every patient suffering from pulmonary tuberculosis should have the benefit of sanatorium treatment before undertaking treatment at home. * * * It is my belief that taken as a whole patients do much better in a sanatorium than they do under home training and treatment.

DAVID R. LYMAN, M. D., Past President National Tuberculosis Association and American Sanatorium Association. Supt. Gaylord Farm Sanatorium, Wallingford, Conn.

"1. During the past year about 50 per cent of our patients received pneumothorax.

"2. Absolutely not.

"3. No. You absolutely cannot train patients to new habits of life in three months.

"4. My opinion is best expressed by the fact that I have no private patients undergoing home treatment * * *."

FRED H. HEISE, M. D., Medical Director, Trudeau Sanatorium, Trudeau, N. Y.

"1. Thirty to forty per cent.

"2. This can be done but training should be thorough and include all complications. Fluoroscopy or X-ray necessary.

"3. For most patients far too soon to return to work.

"4. Sanatorium much more valuable—Public Health Nurses have told me home treatment no good unless the patient has first been in sanatorium."

LAWRASON BROWN, M. D., Saranac Lake, N. Y. Past President National Tuberculosis Association and American Sanatorium Association.

"1. I cannot, but a rather large perecentage, about 25-30 per cent.

"2. Only when necessary.

"3. A longer rest period is advisable.

"4. Few physicians in private practice have time enough to give their patients proper education—hence the value of the sanatorium."

MAURICE MCPHEDRAN, M. D., Member of Diagnostic Committee of National Tuberculosis Association. The Henry Phipps Institute, Philadelphia, Pa.

"1. Percentage impossible to give with accuracy because of the nature of this clinic. * * * I think pneumothorax is desirable for the majority of unilateral cases, and many bilateral cases *whose cavities do not promptly contract under adequate rest.* In some cases I advise pneumothorax when the patient is first seen because of the character and distribution of the lesion.

"2. The proper conduct of some of the cases of pneumothorax requires experience and adequate X-ray facilities to determine whether cavities are being closed. Brief training is inadequate, and experience with tuberculosis is essential to carry on pneumothorax effectively.

"3. No. Evidence of retrogression and scarring within the collapsed lung should be observed before a patient can safely return to work. Even then, close supervision is essential.

"4. Sanatorium training and treatment of patients offer, in a well-conducted sanatorium, advantages that home treatment cannot give."

KENNON DUNHAM, M. D., Past President National Tuberculosis Association. The Tuberculosis Sanatorium, Price Hill, Cincinnati, Ohio.

"1. We have in the sanatorium about 500 adults, and of these, last year 237 were under pneumothorax treatment.

"2. I have never approved, much less advocated any half-baked training. It is sure to do more harm than good.

"3. We do not follow this practice. We have too many patients breaking down under the most careful treatment. If a patient is financially able to continue treatment at home, this may be possible, with a cooperative patient and a doctor trained in the management of tuberculosis.

"4. Home treatment is much more difficult. If the patient is to stay at home successfully, the home must be converted into a hospital. Therefore, in my judgment successful home treatment is really sanatorium treatment for a private patient. Your answer, therefore, is that we must have sanatorium treatment, either in a public or private sanatorium."

A summary of the answers to the four questions found above shows a variation of from 9—50 per cent of the patients under the care of the different physicians whose answers are given above with a combined average of 29.5 per cent of their patients receiving pneumothorax.

In the answers to question 2 in regard to general practitioners administering pneumothorax in their offices, eight are against this practice and two, Cullen of Maryland and Heise of Trudeau, approve with reservations.

In the answers to question 3, all ten are unanimously against patients being returned to their usual occupations within from one to three months after compression has been established.

In the answers to question 4 as to the relative value of sanatorium training and treatment against home treatment, all ten are for sanatorium treatment. It is seen by these answers that a conservative attitude in the treatment of pulmonary tuberculosis is being taken by all of these men.

CONCLUSIONS

1. Surgical compression is often a valuable therapeutic measure in the general treatment of tuberculosis in those cases in whom it is indicated.

2. Induced, or artificial pneumothorax is the method of choice in surgical compression of a lung. In many instances under this treatment the diseased lung will heal, the air in the pleural sac will be absorbed, and the lung allowed to re-expand and again function, whereas, in permanent surgical compression there is, of course, no further restoration of function.

3. In conformity with the opinion of many of our medical leaders in this work, we believe that surgical collapse of the lung is not in itself a cure for tuberculous disease, but should always be accompanied by prolonged rest and general treatment of the patient before it is safe to return to his or her usual mode of living.

4. Practice of collapse therapy for tuberculous patients should not be attempted by physicians who have not had special training in the technique of this work, and who are not properly equipped for it.

SALIENT POINTS IN EMERGENCY SURGERY.*

M. H. TODD, M. D.,
Norfolk, Va.

Ordinary wounds of the soft parts can be treated by loose sutures or clips, leaving space for drainage. If edges are ragged, trim them, and often leave in a small rubber tissue drain. If deep and dirty, debride the wound, but don't injure tendons, nerve trunks or large vessels; suture only loosely, and be sure there is no tension; sometimes small relaxation incisions off to the side will help. If severe and grossly infected, best not suture at all, but lay in Carrel tubes and irrigate with Dakin's solution. Healing will then be by granulation, unless you wish to do a secondary suture; this still works perfectly well, as it did during the war, but smears must show almost no bacteria if it is to be successful.

It is probably best not to use strong antiseptics in the wound itself.

Skin loss is treated by allowing to granulate cleanly, and then doing a skin-graft, early, to prevent contraction of the scar. This applies most forcibly to loss of skin from burns, where delay in such grafting may lead to unsightly and disabling deformity.

Dirt ground into the skin can be removed by a stiff brush, under anesthesia.

Lacerations of the face take a lot of time to sew up correctly; the skin edges have to be fitted very exactly, like a jig-saw puzzle, or there will be a needlessly disfiguring scar.

These wounds heal kindly, however, because of the superabundant blood supply. Primary swelling subsides, leaving normal contours.

Penetrating injuries of the eye-ball are emergencies of the first order; for infection may follow with loss of, not one, but both eyes. Therefore, rush such injuries to the specialist, in the dead of night if need be.

Puncture wounds of the palm or sole are to be incised and left open.

Where contamination by the soil is probable, use tetanus antitoxin, of course, and repeat in a week unless healing is clean.

If tetanus occurs, always debride the wound, even if healed; second, give large amounts of serum into vein and muscle—not intraspinally; third, use avertin, and, fourth, plenty of fluids and dextrose, by any route possible.

*Read before the Northampton County Medical Society, at Eastville, Va., October 2, 1935.

XUM

Gas gangrene is seldom seen in civilian life; it may be recognized by the X-ray before crepitation can be felt, and it is treated by excision of the involved soft parts, sometimes by amputation, and by the serum.

THE HAND

Tendon injuries are serious, and really come under the head of major surgery. If four hours or less have elapsed since injury, and the wound looks clean, do an immediate suture, handling the tendon with great care. If seen later, it is best to allow the wound to heal as it will, and do a secondary tendon repair later.

Suture tendon to tendon, not tendon to the median nerve. Suture smoothly, leaving no raw end, or it will adhere and prevent motion.

See that the fingers stay flexible; otherwise it will do no good to repair the tendon. If doing a secondary repair, use fine silk, and insist on active motion by the patient himself, at once. Tendon grafts often work well; use one of the toe extensors, with its paratenon fat.

Hand injuries in general belong in the realm of major surgery; it is really best to hospitalize all except the most superficial. Rest in bed at the hospital is a very different thing from rest at home. If infection once gets a good start, the hand may be, and often is, ruined for all time. In general, suture only very loosely, use a strip of rubber for a drain, not down to tendon or bare bone; splint the hand, and keep the patient strictly in bed. Watch especially wounds over the dorsal aspect of finger-joints; if infected, the finger may easily be lost. The patient will complain about being put to bed for hand injuries, but this practice is sure to save plenty of time and money in the end.

Infections of the hand are serious. Felons are treated by lateral incision carried around to the end of the finger, or even clear across the end to the other side, like a fish-mouth. *Warning*—Do not incise the flexor tendon sheath at the same time, or the infection will spread up the hand. Infections of the palm are very serious, though not frequent. Operation should only be done under anesthesia and the tourniquet; otherwise, uninfected spaces may be grossly contaminated by the operation.

Infected hands may show most of the swelling on the dorsum; but incisions here do not reach the trouble.

The most serious infection of all is the streptococcus lymphangitis; for ill-advised operation here will result in rapid invasion of the blood stream, sepsis and early death of the patient—the dreaded "blood-poison" of the laity.

Let me here emphasize one of the older forms of treatment, often forgotten, but unquestionably life-saving—namely, Bier's hyperemia. Put on a blood pressure cuff at the elbow, and keep it inflated to about 20 mm. Hg. with an hour's rest twice in twenty-four hours (or use the Esmarch bandage with gentle compression) and general sepsis will almost certainly not occur. In my experience it has never occurred. Furthermore, with this treatment better drainage will take place through smaller incisions. I learned this treatment from John Finney.

PERIPHERAL NERVE

Injuries to the peripheral nerves are treated by immediate suture if the wound is fairly clean. Use fine arterial silk, and handle the nerve with gentleness. If suture is done later, after wound healing, expose the scarred area by first identifying the nerve-trunk above and below the point of injury. Excise the scar with a razor-blade, making transverse cuts and slicing the nerve like a loaf of bread until beyond the scarred area, where nerve-bundles can again be seen. Otherwise you are only suturing fibrous tissues. Lengthening may be required, by grossly separating the nerve from surrounding soft parts; a reasonable gap can be overcome by flexing the joints. The radial and sciatic nerves recover quite well, the median and ulnar not so well. Recovery in any case takes a long time—let us say eighteen months. Keep the muscles constantly relaxed by splinting, i. e., never let wrist-drop or foot-drop occur even for a few hours; and use the galvanic current and massage. Prevent contracture; and above all other things, keep the finger-joints flexible; otherwise, the whole operation is useless. Watch for trophic ulcers, from hot-water bottles and cigarettes. Nerve grafts are useless, as a rule.

BURNS

Spray on fresh tannic acid solution, 3 to 5 per cent, every few minutes until tanned; then use the electric light cradle over the uncovered burned area. If a large area is burned, even though only superficially, there is grave danger of death, especially in children. Use very large amounts of fluids by

al channels; morphine for pain; high caloric diet. If the patient lives, watch for contracture, especially near joints, and use splintage accordingly. Skin-graft at the earliest opportunity, often by Reverdin grafts; better, if practicable, by rather thick Thiersch grafts. Early grafting prevents contracting scars, and as soon as the raw surface is healed, the patient immediately gets better in his general condition.

Note that burns rather easily get infected, and that tetanus may occur. If inflammation appears, trim away the neighboring edges of the tanned eschar, to permit drainage; but otherwise leave it alone until it comes away by itself.

The horrible deformities that fix the arm, or the chin and the tongue, to the chest, should never occur if grafting is done early. Late cases require extensive plastic operations, with pedicled grafts, etc.; but in general, such deformities mean that someone failed to graft skin as soon as he should.

THE ABDOMEN

Surgical emergencies of the abdomen fall into two groups—those due to trauma, and those due to disease.

Penetrating abdominal wounds are dangerous to life mainly because of intestinal injury, which leads to a fatal peritonitis. Gunshot wounds, in addition, are dangerous because of shock, and internal hemorrhage from injury to large vessels, or the liver, spleen or kidney. Simple wounds penetrating into the peritoneal cavity, without visceral injury, are not of themselves ordinarily dangerous, for the peritoneum will take care of moderate infection if simply left alone.

Diagnosis of intestinal injury can generally be made from the location of penetrating wounds. If there is doubt, an X-ray film should be made with the patient held sitting for a moment, the ray directed horizontally at the level of the top of the liver. This shows at once any escaped gas, as a clear curved line separating the liver from the diaphragm; and this finding is positive evidence of intestinal perforation. A single negative finding does not entirely rule out intestinal injury, but if repeatedly negative, such injury is unlikely.

Do not be misled by the mildness of early symptoms in abdominal injury; this warning is especially important where no penetration of the abdominal wall has taken place. The intestine may be ruptured by a contusion, a mule-kick, for instance, with relatively mild symptoms for many hours, i. e., only a little soreness, little spasm of the muscles, and, of course, no fever or increase in pulse rate. The X-ray is by all means the most urgently necessary diagnostic aid where there is such a possibility, for delay, of course, means peritonitis, which is apt to mean death.

Operation is to be done, in general, as soon as primary shock has subsided, if intestinal perforation or rupture of the spleen or liver has occurred. Intestinal perforation must be closed; resection of damaged bowel may be required. In general, do not drain the peritoneum if operation is performed within the first few hours, even if the colon is involved.

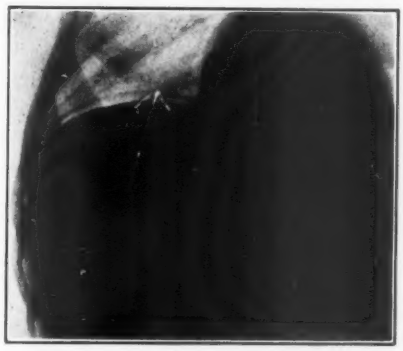

Fig. 1.—Escaped gas from intestinal perforation.

Ruptures of the spleen are treated by splenectomy, an easy operation in such cases—vastly different from its removal in Banti's disease.

A torn liver is to be sutured or packed or both. Kidney injuries are usually best left alone; sometimes nephrectomy is necessary. Secondary bleeding or abscess may be a late complication.

Ruptures of the bladder demand suture and drainage, generally above the pubis.

Abdominal emergencies due to *disease* comprise gastro-intestinal perforation and obstruction; gastro-intestinal bleeding is ordinarily a medical, not a surgical emergency.

Acute perforation gives rise to severe pain, and to muscular spasm that attains a board-like rigidity, impossible to relax by any effort of the will; and, in general, the X-ray will show gas above the liver, just as described in speaking of traumatic perforation. There may be no antecedent history of any

form of indigestion. Operation consists of simple closure, unless there is also obstruction, when a side-tracking operation may be added. In general, again, do not drain unless a number of hours have elapsed.

Typhoid perforation is more obscure in its symptoms, because the patient is dull mentally; but the X-ray shows the diagnostic findings as noted. Operation is imperative; the outlook is rather poor.

Intestinal obstruction is a very deadly emergency, which I personally fear above all the others. Toxemia is insidious and often unrecognized for many hours, and the symptoms, cramping pain with vomiting and distention, are often indefinite until a late stage. Enemas may give a good result for a long time. The pulse and temperature are normal, the blood count not much changed. Every hour of delay of course makes the situation worse.

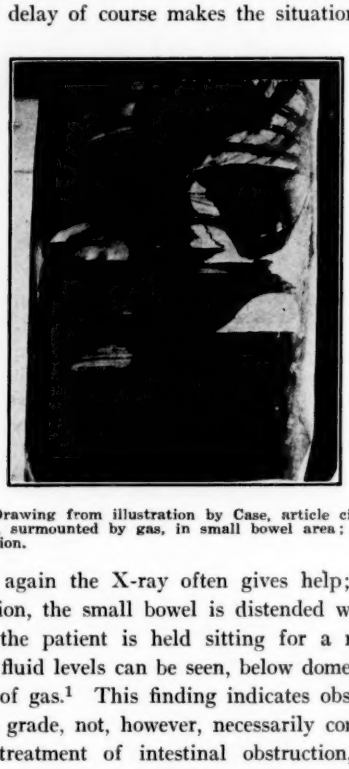

Fig. 2.—Drawing from illustration by Case, article cited; fluid levels, surmounted by gas, in small bowel area; acute obstruction.

Here again the X-ray often gives help; for in obstruction, the small bowel is distended with gas, and if the patient is held sitting for a moment, distinct fluid levels can be seen, below dome-shaped pockets of gas.[1] This finding indicates obstruction of some grade, not, however, necessarily complete.

The treatment of intestinal obstruction, where there is any question of intussusception, volvulus or strangulated hernia, is inevitably surgical. In this connection, let me call your attention to the curious fact that strangulated femoral hernia may not be tender nor swollen to outside examination, though inguinal or umbilical hernias are.

Operation may be postponed for a little while to permit giving fluids and salt; for these necessary elements have usually been depleted by vomiting so that the patient is pretty well dehydrated on admission to the hospital; but, otherwise, the sooner the operation, the better by far, for mortality increases very rapidly with every hour of delay. The procedure consists in release of the obstruction, and, if need be, resection of the bowel, often adding an enterostomy above this point, or entero-anastomosis around the obstruction. There are several paradoxes in connection with this condition which have not been very well unraveled as yet. For instance, the bowel must be relieved of pressure, and yet sudden release may kill the patient; and the very enterostomy opening that is so imperative at first, may later prove fatal, partly from starvation. The fecal current must be re-established, and yet, if the lower bowel is flooded at once with the upper intestinal contents, dangerous shock may take place.

Intussusception is treated by reducing it, if the gut is viable. If not, recovery has followed a number of different procedures, one of them being to fasten the invaginated gut where it is, by a few sutures, and simply allow it to slough off inside the good bowel, meantime providing a short-circuit around the obstruction by entero-anastomosis.

This short-circuiting operation, entero-anastomosis, will not work permanently if the short section of the bowel remains obstructed, because then a progressive dilatation, with ulceration, slowly takes place, and a later resection has to be done. Otherwise it can be left as it is.

The Bartletts and others have suggested that intestinal obstruction where strangulation and gangrene seem less likely, the simple use of the inlying nasal tube, with continuous suction, may suffice. This seems inadequate, but it is said to work.

The whole secret of success in this difficult and deadly condition lies in early diagnosis; and here, as always, the general practitioner is the first and by far the most important line of defense. I wish to say here with emphasis that the surgeon is to be called early, to help out in the matter, not late. As a matter of fact, this applies to all acute abdominal cases. The surgeon should not only be permitted, but required to take a decided part in the responsibility for the diagnosis. Otherwise, the patient is deprived of professional advice of a most experi-

enced, seasoned and specialized type, which may easily mean the difference between his life and his death.

I cannot believe that it should be a matter of pride to the general practitioner to always be able to give the surgeon a complete diagnosis when he asks him to see a patient, for this inevitably means that he will sometime call on him in a late stage; to me, it is a much greater evidence of his own professional acumen to realize the imperative necessity of making a diagnosis while the case is still in the early stage, and therefore to call his surgical confrere to see the patient while there may still be plenty of doubt in the minds of both of them.

There is no need to fear that a really competent surgeon will rush into operation too early; the responsibility of operating is quite great, believe it or not, and no one wants to be doing such a thing unless it is really called for.

The above remarks apply to practice in towns; in the country, the general practitioner will always have to rely on his own judgment as a rule, for the surgeon is not accessible to him.

Ectopic pregnancy can sometimes be diagnosed before rupture. I have done so several times and have also mis-diagnosed it appenditicis, and have made the diagnosis when no ectopic pregnancy existed; I have even diagnosed it on the wrong side. This ought to cover the ground of possible errors, I should hope.

In general, it is diagnosed at rupture, and I think that as a rule the diagnosis is not missed at this time, the symptoms being reasonably typical, i. e., abdominal pain and collapse, with signs of internal hemorrhage. Treatment, of course, is immediate laparotomy, with simultaneous transfusion; failing a donor, use intravenous acacia. Start the operation at once, and as soon as the peritoneum is opened, perform auto-transfusion with the patient's own blood, first observing the precaution to wash out the acacia solution with saline; otherwise the blood will clot in the apparatus. This procedure is life-saving. I have seen a patient in air-hunger when operation was started, with blood pressure of 60, recover at once, so that by the time the incision was closed, the pressure was 130 and the color was normally pink.

Nota bene. Ectopic pregnancy is one emergency, almost the only one, in which delay to allow recovery from primary shock is not advisable.

Auto-transfusion, by the way, can also be used in cases of rupture of the spleen—not, they tell me, ruptured liver. It is an extremely valuable procedure, for there is no delay in matching a donor.

Other obstetrical emergencies, including rupture of the uterus, I shall not go into, if you please.

APPENDICITIS

Appendicitis is the most common emergency of all. You are all familiar with the classical picture. Let me call your attention to the fact that any or all of the signs and symptoms may be absent for many hours; and that no one can ever be sure of the severity of the process, which may seem mild when it is really severe, and severe when it is mild. Fever and rise in pulse are not to be awaited. They are late, not early signs. The blood count may correspond to the degree of trouble, or may be entirely misleading. To depend on any one sign is dangerous. If any sign is pretty constant, it is a localized area of tenderness—perhaps acute, perhaps mild. I have gone very exhaustively into my own cases, in groups of a hundred or more, some of which I have previously reported[2]; and my personal conclusion is that the physician's only safe advice is to have operation done as soon as it appears reasonably probable that the appendix is inflamed. I have several times failed to diagnose gangrene or rupture when it was present, and I now fear to advise delay in any case. These cases should be seen by the surgeon in the early stage, when possible, as I have permitted myself to emphasize above.

This disease is so common that it is to be suspected in the case of any belly-ache that does not calm down within a few hours, after an enema and strict starvation. I personally do not even use the ice-cap, for I have seen it conceal the very tenderness that I was hoping to depend upon, to make the diagnosis. I hate to even mention this next point, but do not use a purgative in any acute belly-ache.

There is good authority for doing an appendicostomy through the stump, when the stage of peritonitis has been reached. I have not done this myself, relying rather on pitressin intramuscularly every few hours, and sometimes on the inlying Levin tube. This routine almost always prevents ileus.

If drainage is used, the right-side position, with

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the head of the bed raised, does, I think, help drainage for some time. I believe that I can accuse myself of permitting a subphrenic abscess to develop by not observing this routine long enough. The man recovered, but it was a very narrow squeak.

THE CHEST

Wounds of the chest have usually been treated conservatively, that is, by rest in bed, and by aspiration of blood after two or three days, when danger of more bleeding seems past—generally repeating aspiration of moderate quantities. Transfusion is done, if necessary; drainage later if empyema develops.

There is very good authority for replacing aspirated blood with air, and, indeed, for collapsing the lung by artificial pneumothorax to stop bleeding. In a general way, perhaps as much as possible of the effused blood should be removed, after a few days at least, to lessen adhesions.

Bleeding from the injured lung itself rarely indicates operative thoracotomy; bleeding from intercostals or the internal mammary artery occasionally does.

There is at least one variety of chest injury that does demand immediate surgery, namely, open wounds, sucking air. These must be closed by suture, even shifting muscle-flaps if need be. At the same time debride the wound.

The most recent method of treating injuries to the lung itself has been developed at the Harlem Hospital in New York.[4] Briefly, the chest is opened near the wound of entrance, a section of rib is removed, and the lung pulled up and sutured to the chest wall all around the lacerated area, which is thus exteriorized. I have not tried it, but it sounds logical and practical, and would surely minimize pleural infection.

Pulmonary hemorrhage in tuberculosis occasionally demands surgical arrest; this is done by artificial pneumothorax.

There are a number of medical conditions that may be confused with surgical emergencies; they vary from coronary occlusion to lead poisoning, and from spider-bites to the crises of tabes. I cannot go into the differential diagnosis, but will simply call attention to them as additional sources of worry to the physician attempting to find out what is the matter with his patient. Such things explain why physicians get gray hairs and high blood-pressure.

FRACTURES AND DISLOCATIONS

Dislocations, first. There is one universal rule; get the patient completely relaxed, usually under deep, if brief, ether anesthesia. When this is done, it requires no special manipulation at all to reduce any dislocation, even the hip-joint. Simple traction, and a little moving to and fro one way or another, will effect reduction with the greatest ease. But without complete relaxation, Kocher himself, with all his scientific movements of the extremity, might never get it back in place; or, if he used force, might actually break the bone first. Relaxation under ether means that the patient is pink—not black in the face, with clenched jaws and tonic spasms of the hands. All the muscles must positively be relaxed; when this is attained, the dislocation will practically drop into place by itself.

Fractures—These are of necessity treated according to what equipment is available. If X-rays cannot be had, diagnosis will not be very exact, and the most accurate and positive guide to treatment is lacking. Nevertheless, very respectable results can be obtained if the standard general principles are faithfully followed.

Diagnosis can be made by local tenderness, ecchymosis, and slight false motion. Avoid trying for crepitus, for a previously satisfactory position may be spoiled by this maneuver. Above all, make all examinations gently. No use adding insult to injury.

It is very much preferable to use the X-ray if at all possible, and this should be repeated after reduction and fixation, to prove position and protect the patient, not to mention the doctor as well.

Fractures of the middle of long bones only need fair reduction to give good results, though square breaks should not in general be permitted to remain actually overlapped; but fractures near joints have to be set with considerable care, to avoid decided impairment of function. I call your attention especially to the lower end of the leg; and to the upper end, just below the knee, the automobile bumper fracture, where angulation may cause a very disabling bowleg, knock-knee, or back-knee. The latter is easily overlooked at first sight—I have been caught napping here myself—and is a decided impairment. The same thing is true of the lower end of the femur, and of course also of the supracondylar fracture of the humerus, just above the elbow.

Fractures involving the joint surfaces themselves demand a very precise reduction, even by operation if need be. Examples are fractures of the humeral condyles, whether in adults or in children, and the tri-malleolar Cotton's fracture of the ankle, with upward displacement of the posterior corner of the lower end of the tibia. Failure to get such fractures accurately back in place is sure to cripple the patient more or less—generally more.

In putting on plaster casts, don't make them heavy; most casts that I see are at least twice too thick, and have altogether too much padding in them, so that the extremity floats around inside pretty much as it takes a notion, and the fracture sags out of line. A well-made cast should not just look like a shapeless cylinder of heavy plaster, but should be accurately molded to the contour of the extremity, showing its outlines and curves. I advise the use of a little padding. The German technique without padding is all right for expert use in hospitals, but can give plenty trouble if carelessly used.

Many fractures can be treated better by traction than by using a cast. It is true that this means confinement to bed, but the better result really justifies it.

The healing time of broken bones in adults is much longer than the texts have had it in the past. If a broken leg heals strongly enough to permit full ordinary work within four months, it has done well. In children, strong fixation takes place within a very few days, solid union in a few weeks.

SPECIAL FRACTURES

Fractures of the clavicle always heal solidly; usually a little deformity is left. In children, this disappears; in men, it is not of importance. In women, it is worth while going to some trouble to avoid if you can. In a general way, any fixation of the arm will result in satisfactory union—the Velpeau bandage, or adhesive, or the T-splint; later, simply a sling. In women, certain special splints, or rest in bed with a sandbag between the shoulder-blades. These things are most uncomfortable, but may give better results. Over-lapped fractures are very hard to get reduced, to my mind, and some method of direct manipulation of the bone, as with a towel-clip, is worth trying. I cannot say that I am always contented with my own results in women.

Fractures of the humerus present some difficulty in any location.

Fractures of the surgical neck are hard to reduce correctly except under the fluoroscope, though after reduction they tend to stay in place. I do not like the airplane splints very much, though I sometimes use them. Without this splint, there is some difficulty in attaining good abduction later on, unless motion is carefully performed repeatedly during the whole course of treatment.

Fractures of the shaft are hard to hold in place, and non-union is not infrequent. I have rather often resorted to open reduction and fixation. Perhaps traction in bed for three weeks or so is as good a method as any.

Fractures just above the condyles, especially in children, are difficult to manage; they require a good deal of force in reduction, even under good anesthesia. They give rise to so much swelling that flexion treatment may be dangerous, but unless well flexed, they may slip back out of place. Poor reduction means an inevitable loss in flexion. There is some risk of Volkmann's contracture, especially if arterial bleeding takes place under the deep fascia; and free incision through the fascia may be necessary to avert this tragedy.

Fractures of the condyles with displacement demand an exactness of reduction that can generally not be attained except by operation. Failure to get the little pieces back into place means an increasing deformity that very seriously impairs the whole arm in later years.

Fractures of the shaft of one bone of the forearm give good results even with imperfect reduction; fractures of both bones are very hard to reduce, even under the fluoroscope, and, unless reduced, will give poor results, with lasting deformity. Here again open reduction may be required, or fixation with the Kirschner wire, incorporated in the cast. The ulna is the most important bone in the upper third of the forearm; in the lower third, the radius. Fractures of the head of the radius are often best excised.

Fractures of the metacarpal bones and of the fingers are apt to give poor results with notable stiffening, especially of the proximal knuckle. Such fractures are worthy of unremitting care, not a casual straight tongue-blade splintage. I rather think the

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banjo-splint, with elastic traction, may be best, though it certainly looks clumsy.

Compound fractures of the fingers, with infection, give such poor results that it is sometimes actually better to go ahead and amputate the finger, rather than treat it for weeks and meantime let the whole hand get stiff.

Fractures of the femur can usually be treated well enough by traction, and usually unite, though slowly. I do not like to allow square breaks of the femur to remain over-riding, nor, for that matter, square breaks of the humerus or of the tibia, for this may result in non-union, a very serious complication; and am inclined to operate on them unless I can keep them in good position, at least corner-on. Sometimes skeletal traction will prove efficient, but not by any means always; and, furthermore, skeletal traction itself is not too easy a method to use well. One great help in reducing fractures of the shaft of the femur is to use spinal anesthesia, which relaxes the big thigh muscles until they are like dish-cloths. Fractures of the femur, you remember, are serious enough, so that special hospitals were set aside for them during the war.

Let me remind you that the bone tends to sag backward. Of course, it is normally curved forward, decidedly; so that, unless plenty of support is arranged under the middle of the thigh, there is bound to be backward angulation. Furthermore, the upper fragment is generally rotated outward, and unless the lower fragment is also held in some outward rotation, the patient will discover later on that he is pigeon-toed. I did not realize this until I treated a man with both femurs broken—thus doubling the usual deformity. I don't know why the textbooks fail to call attention to this, but they generally do fail.

Do not discontinue traction and put on a cast until there is quite a little union; and when you do, watch out for outward and backward sagging of the bone. I have treated a good many broken femurs without using a cast at all, and, to tell you the truth, I believe it is a better way of doing, though it keeps the patient in bed longer. Of course, the cast does not hold the fracture at all unless it goes up around the pelvis—and even then it does not hold it with any real firmness.

In children, fractures of the femur are different to this extent—that it is not necessary to get the bones end-on; excellent results are obtained even with a little over-lapping; but here again it is very necessary to watch out for sagging of the bone, either backward or outward; and here again traction should not be discarded for a cast, too soon. Be sure there is considerable union first.

There is apt to be considerable stiffness of the knee after fractures of the femur. If it persists and is too disabling, the Bennett operation is in order.

Fractures of the bones of the leg can very usually be treated by a plaster cast, from the toes to above the knee. The middle of the shaft of the tibia is apt to heal very slowly. Here, as elsewhere, the worse comminuted the fracture looks, the better it will heal; the simple square breaks heal slowest of all—so slowly that, unless position is very good indeed, it actually saves time to go ahead and operate. I find that I have operated upon only 5 per cent of the broken leg-bones I have treated; but I have also wasted many months' time in case after case, by not doing so. Sherman is probably right here—not that war is hell, but that where there is poor position it pays to go ahead and use his vanadium steel plate.

Fractures of the heel-bone often give very poor results. It is probably best to pull the distal fragment back into alignment, using a steel pin through or above the bone, then to pound on the outer part of the bone beneath the outer malleolus after the method of Cotton, and finally put on a cast with the foot in a little plantar flexion so as to relax the heel-cord. By the way, this is about the only situation I can think of, where it is allowable to put a cast on in a position of drop-foot. This is often enough done in any cast on the leg, but it is not good technique.

I have not found that metatarsal fractures give trouble with flat-feet afterward.

Fractures of the skull are important because of associated brain injury, usually worse when the fracture is at the base. They are to be handled in general by treating the associated shock at first, using sedatives other than morphine for restlessness, limiting fluids somewhat; and performing diagnostic spinal puncture after shock has abated. X-rays are also to be taken only after improvement from primary shock, perhaps not for a day or two. There is considerable variation in the different clinics, as

t strict fluid limitation, and to repeated lumbar puncture.

Operation is reserved for compound fractures, and for the few cases that give evidence of extradural bleeding—classically, a clear interval, followed by a relapse into stupor, with descending paralysis of the side of the body opposite the location of the bleeding.

Subdural hematoma, about which several articles have come out recently, is a late complication; it is treated by trephining and washing out the clot when symptoms appear.

Compound fractures are to be carefully cleaned and trimmed, and closed loosely, leaving a strip of rubber tissue as a rule.

Depressed fractures are probably best left alone unless they would cause disfigurement. If so, it is a good practice to carefully restore the rounded contour of the skull, by trephining and elevating, or, if necessary, using a graft from the adjacent outer table. This really comes under the head of plastic repair, not emergency surgery. It is thought at present that no good is done by the repair of the depression, as far as remote symptoms such as epilepsy are concerned.

Children get well from brain injuries; adults are often left, at least for a long time, with some inability to concentrate and some headache and dizziness. Temple Fay has demonstrated gross cerebral atrophy in some of these cases, which are therefore not to be casually diagnosed as neurosis.

Fractures of the spine usually occur in the lower dorsal or upper lumbar region, and are of three varieties. First, come fractures of the transverse processes, from direct trauma; these are no more serious than a broken rib, and are treated by simple strapping with adhesive.

Second, the compression fracture, with wedge-shaped deformity of the vertebral body, caused usually by indirect trauma. This variety has frequently been overlooked; it is only to be diagnosed by the lateral X-ray. It may be followed by increasing kyphosis and disability if untreated, but, if well treated, leaves relatively little permanent disability. Reduction is effected by causing the patient to lie face-down, with the pelvis resting on a table, and the chin, neck and outstretched elbows on a rather higher table. No support is given the trunk, which sags down into hyperextension, while a plaster jacket is rapidly put on. Curiously enough, there is little actual pain, so that, with a "hypo" of morphine, the patient can stand the procedure quite well. By the time the plaster hardens, reduction has already taken place by itself. Rest in bed is only necessary for a week or so, after which the patient can be ambulatory; and by suitable exercises the back can be developed up to almost normal strength. Note, however, that if there is any comminution of the articular processes, such a procedure would be very dangerous.

The third variety of fractured spine is the fracture-dislocation, with paralysis. Immobilization should be effected on a Bradford frame, or in a cast; perhaps laminectomy should be done. Usually do not catheterize. The outlook is very poor; half the patients die, sooner or later, and few are ever able to walk. I have had only one success by doing laminectomy, and in this case there was at first no paralysis. By the end of the fourth day, however, there was no motion below the waist. Here, after operation, that was a rather quick recovery, so that within three weeks the ankles could move very strongly; and after some months the man went back to work as a coal miner.

I have had only a single case of dislocation of the neck to treat. I could not get it back by skeletal traction with Crutchfield's skull tongs, though I used heavy weights for a week; so that I was forced to reduce it by open operation, tying the adjacent laminae together to prevent recurrence.

Fracture of the pelvis is common, and has frequently been overlooked. Even the X-ray has failed to reveal it at times. It is treated by rest in bed, perhaps on a Bradford frame, or with suspension in a sling, or a wide adhesive swathe, or a light cast. The end-results are quite good even when there is displacement. In women, pregnancy may be interferred with by narrowing of the inlet, though this is unusual. The dangerous complication is rupture of the male urethra, which makes operation imperative—perineal or retrograde urethrotomy.

Operation in Fractures

There are some fractures in which open reduction and fixation is to be used. They include some of the transverse breaks of the femur, certain fractures of the humerus and the tibia with curved ends, and various fractures near or into the joints. The most generally useful means of fixation is the Sherman vanadium steel plate. By open operation,

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position and alignment are correct and secure, union is quick and certain, and joint motion can be easily attended to.

Fig. 3.—Fracture humerus, with curved ends.

Open operation, however, demands special instruments, and an exacting technique with the skin blocked off, and is only to be done by those with reasonable experience in major surgery.[4] The frequently voiced comments against this method are not based on observation of the procedure in competent hands.

Fig. 4.—Fracture tibia, curved ends, plated.

The Steinman pin and the Kirschner wire both have their place in fracture work, where traction or fixation cannot be attained by closed methods; so do the special frames and splints. I do not in general approve of actual weight-bearing after pin or wire fixation in a cast, though some experts use it with advantage; it certainly is risky unless closely watched.

Non-union of fractures occurs most often in the shaft of the femur, the tibia, or the humerus; and most often of all, in the neck of the femur. It is treated by bone-grafting. This procedure also demands very exacting technique and specialized instruments; and great caution must be used in the neighborhood of old scars, for fear of sloughing or infection.

Another method is to bore multiple holes through the whole fracture area with a small drill.

COMMONLY TROUBLESOME FRACTURES

Now, if you will permit, I want to turn to the three most commonly troublesome fractures of all. You all see them, and they do not always give good results. First is the fracture of the hip. This occurs in two entirely different forms; one, the extracapsular or intertrochanteric fracture, often comminuted, may be handled by simple traction in abduction, and it will almost invariably unite solidly in good season, and leave very little disability, even in the aged. The other type, the fracture through

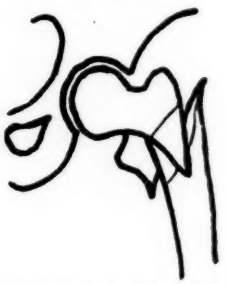

Fig. 5.—Extracapsular fracture of the hip.

the small part of the neck of the femur proper, is decidedly the most difficult fracture to treat in the whole body. It results in poor union or non-union in half the cases, even in very good hands, with permanent crippling, often complete. My personal inclination is to impact the bone after the method of Cotton if I am able to really get it back in place, and then keep on a Whitman cast for a long time. If not, I am coming to believe that open reduction should be done—also with Cotton's impaction. Without good reduction, union is very unlikely. You are of course aware that many of these

patients are poor risks, and 15 per cent of them die. If the patient has strong union in a year, he has done well.

Pott's fracture at the ankle results in lateral shifting of the astragalus in the mortise of the ankle-joint; and the whole success of its treatment depends on getting the ankle and the foot back again into proper relation with the tibia, so that the curve of the joint-line is unbroken. This means, not inversion of the foot, which seems poor practice to me, but rather shifting of the foot medially, with lateral counter-pressure against the tibia above the ankle; and molding the plaster cast so as to maintain this position as it hardens.[5]

Fig. 6.—Intracapsular fracture of the hip.

Pott's fracture can also be treated by the Delbet plaster of Paris splint, and the patient can walk at once, bearing all his weight on the injured leg; but I advise against trying this procedure unless you can watch your patient in the hospital for some days.

Colles, the most familiar of all, I have left until the last of the fractures.[6] Many sins have been committed in the past, in the name of treatment, and many crippled hands are left by the wayside. But this fracture can, and should, give a very good end-result. The principles are simple. First, reduce it well, under anesthesia—local anesthesia if you like. Impaction must be broken up by first exaggerating the silver-fork deformity, before pulling and carrying the lower fragment around into line. Second, splint the wrist and hand with the wrist about straight, and with direct though moderate pressure over the distal fragment so that it cannot ride back into the original deformity. I use molded plaster; but the commercial Colles' fracture splint will do if you like. Direct pressure over the wrist is to be made by a strap of adhesive, slanted so as to avoid pressing on the ulnar styloid. The third point is this, that the splint most positively must not interfere with the free use of the fingers. This rule is absolute. The patient must be able to clench his fist from the very first, and actual use of the hand is to be insisted upon, for eating, buttoning the clothes, knitting, and other light uses. Office men need only lose a day or two from their work. I cannot insist on this principle too strongly.

The splint should extend only to the life-line of the hand, for you will note that here is the location of the proximal knuckle joint.

Failure to observe these rules means a crippled stiff hand, which even after weeks of massage and exercise may never again regain anything like its former flexibility. And such a hand is really, I assure you, entirely uncalled for.

Observe this, further: if a stiff hand is uncalled for after a Colles' fracture, how much less is it justifiable as an end-result of an injury to the arm higher up. Yet, unless unremitting care is exercised to compel the patient to clench his fist several times a day, even fractures of the shoulder can give just such crippled hands. Let me say it all over again: if your splintage interferes with the patient making a good respectable fist, shorten it until he can make a fist. I am a crank about this, for in England, and I am sorry to say also in America, I have seen some perfectly inexcusable results because this principle was overlooked.

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THE IMMEDIATE CARE OF PERFORATIONS OF THE GLOBE—OBSERVATIONS IN SEVENTY-TWO CASES.*

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The proper early management of injuries to the eye is just as essential as any other part of the body. Careful replacement of injured and torn tissues are important if satisfactory cosmetic and functional results are obtained. Extreme care must be exercised in the manipulation in order that torn tissues may not be sacrificed. Unless one is properly equipped to handle this delicate type of surgery, it is preferable to cleanse the wound, apply a sterile dressing and refer the patient to one who is competent to handle such case.[1]

Since automobile accidents are steadily increasing, eye and facial injuries are becoming more common. These cases are often first seen by the family physician who has not had an opportunity for special training in the management of this type of injury, and occasionally more harm is done by improper emergency treatment than possibly would have occurred if the patient had not been treated at all. The vision should be taken in each eye before treatment is begun and before the patient has had an opportunity to be advised of the possibilities of compensation. A careful history of the nature of the accident should be taken in every case as it will often give valuable information on the gravity of the injury. This is especially true when foreign bodies have entered the eye.

Treatment may be divided (1) into emergency first aid; (2) treatment after admission to hospital.

Emergency treatment in the hands of the general practitioner consists of a record of the visual acuity in each eye. First, secure antisepsis by cleansing eye with warm boric acid solution and instilling into the eye 2 per cent butyn eye ointment or 1-3000 bichloride ointment; second, cover eye with sterile pad; third, give prophylactic dose (1,500 units antitetanic serum); fourth, if the practitioner is familiar with normal tension of the eye, atropine sulphate solution 1 per cent should be instilled, as it puts the iris and ciliary muscle at rest. It gives relaxation that may be compared to general anesthesia for the adjustment of a fractured femur.[2]

Diagnosis.—The diagnosis of an intra-ocular foreign body is made, first, by the aid of the ophthalmoscope; second, by careful X-ray examination; third, by slit lamp and corneal microscope; fourth, by examination with the magnet; fifth, careful history of the patient.

Hospital treatment may be divided into (1) those cases without retention of foreign body, and (2) those cases with retention of foreign body. In either case a careful record should be made of the history, bacteriology and symptoms.

In perforating injuries, when so severe that there is no prospect of retaining the eye-ball in a usable condition, enucleation can be undertaken at once; however, one should not be too hasty in advising the removal of an injured eye. Many injuries, seemingly without any prospects, finally heal with a fortunate result.

The fear of sympathetic ophthalmia is lessened since the observations gained from the use of foreign protein injections and prophylactic dosage of anti-tetanic serum. In our own experience in the past four years, we have practiced conservatism in the management of severe injuries of the eye,[3] since we feel that sympathetic ophthalmia can be prevented in nearly all cases, and, if this complication does occur, we are better prepared to treat it successfully by use of (1) emulsion of uveal pigments; (2) vaccines, serums and non-specific proteins; (3) hemotherapy.

Perforating injuries caused by penetrating foreign bodies offer in general an unfavorable prognosis. Conservative treatment, local and constitutional, should be followed from one to forty-eight hours until one is certain that suppurative endophthalmitis will not develop; then the foreign body should be removed, if possible.

In our series of seventy-two cases during the past eight years, the following information is given:

*Read before the Southwestern Virginia Medical Society, at Christiansburg, March 22, 1935.

Perforation by F. B.	46
Perforations without F. B.	26
Number of F. B. removed	14
Number of F. B. retained	1
Number of enucleations	28
Number eyes blind (light perception)	5
Number normal vision	6
Number reduced vision	28
Number industrial workers	17
Number farmers	50
Number unclassified	5
Number sympathetic ophthalmia	0
Number conjunctival flaps	21
Total number perforations	72

DISCUSSION

The analysis of cases presented does not include contusions of the globe or perforations of the conjunctiva but only ones in which the globe was perforated by a foreign body or penetrating objects. Detail description of diagnosis and surgical treatment has been purposely omitted, but a plea is made for close co-operation with the general physician or surgeon in the management of injured eyes as many cases *must be* and *can be* cared for by the general physician who will find the ophthalmoscope and some knowledge of the normal tension of the eye-ball important aids in diagnosis.[4] A plea is also made for a more conservative approach to perforating ocular injuries. Useful vision may often be preserved in eyes which at first appear to be totally destroyed. Many injured eyes have been removed by ophthalmologists too hastily with the view of preventing sympathetic ophthalmia.[3] This complication should not be dreaded, though it is comparatively rare. Theobald, in a study of 1,465 cases of perforating injuries, found that only ten developed sympathetic ophthalmia. Greenwood states only one case developed in all of the injuries of the eye among the soldiers of the American Expeditionary Forces. The fairly sensitive intra-cutaneous test enables us to uncover the onset of the disease at an early stage and thus combat it more successfully. Attention is directed to the slit-lamp as a definite aid to early diagnosis. Also, more efficient therapeutic measures are referred to: (a) emulsion of uveal pigment; (b) vaccines, serums and non-specific proteins; (c) hemo-therapy.

CONCLUSIONS

1. Always make a record of the visual acuity in each eye before the patient has time to think of compensation.

2. Thoroughly cleanse eye and eye-lids; (a) then instill 1 per cent atropine, if familiar with normal tension; (b) instill 2 per cent butyn eye ointment, and apply sterile bandage.

3. Injuries of the eye-ball and eye-lids in the early stages are usually benefited by cold; in the later stages by heat.

4. Give prophylactic dose of anti-tetanic serum.

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A SUPPOSED ANALOGY BETWEEN HYPERTHYROIDISM AND PEPTIC ULCER.*

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The etiology of peptic ulcer and its pathogenesis is as yet to be determined. From the time of Rokitansky it has been admitted that a peptic ulcer starts as a simple erosion. The problem in the etiology of peptic ulcer is twofold; those causes which operate to cause an erosion, and once an erosion is produced, what causes transfer an erosion into a peptic ulcer.

The causes which have been advanced to explain the production of an erosion of the mucosa of the stomach, or duodenum, are almost without number. It seems that any cause which will produce an ero-

*Read before the Richmond Academy of Medicine, October, 1934.

sion of any other organ will produce a peptic erosion.

Among these may be mentioned mechanical, physical, or chemical injury. Examples of such are the development of ulcers in young nursling calves which have been prematurely taken from their mother's udder and given unground food; the production of ulcers in the dog's stomach by blows over the gastric region (Griffith); the production of ulcers by Decker by feeding dogs with gruel at a temperature of 50 degrees centigrade; the frequency of gastric ulcers in cooks; the production of ulcers by Bolton by giving 0.5 per cent acetic acid.

Circulatory Causes: Virchow, in 1853, expressed the view that peptic ulcers are due to a faulty blood supply, and he stated that the vessels which are superficially placed are the most apt to be affected. The importance of arteriosclerosis in the production of ulcer has been emphasized.

General Causes: This includes a large number of vague causes such as constitutional, hereditary, and psychic causes.

Anti-Pepsin Theory: Claude Bernard advanced the theory of the presence of an anti-ferment in the gastric mucous membrane which prevented its digestion. Katzenstein established the presence of an anti-pepsin in the walls of the stomach and the first portion of the duodenum and by decreasing the quantity of anti-pepsin of the mucous membrane of the stomach, produced typical callous ulcers. He concluded, therefore, that peptic ulcer was caused by a deficiency of anti-pepsin in the stomach of the ulcer patient. However, this phase of the pathogenesis of peptic ulcer has been refuted by the subsequent work of others and as yet the pepsin-anti-pepsin theory is unsettled.

Infectious Causes: Much brilliant work has been done on this phase of the ulcer problem. Rosenow's classical bacteriologic experiments in which he demonstrated the elective localization of certain strains of streptococci are too well known to require comment. He believes that ulceration is the result of localized infection with secondary digestion.

Allergic Causes: Since Bolton prepared a gastrotoxic serum and his experimental work in the goat and the cat, and since Ivy and Shapiro sensitized an animal to a foreign protein and then produced acute ulcers by injecting the protein locally into the gastric mucous membrane, it has been agreed that allergy *may* play a causative role in the productio of peptic erosion.

The second phase in the pathogenesis of peptic ulcer is the consideration of what circumstances convert a peptic erosion into a peptic ulcer. It is now generally agreed that a peptic erosion is converted into a peptic ulcer by the action of the acid gastric juice upon the eroded area. Since Quinicke, in 1879, first used the term "peptic ulcer," we speak of a peptic ulcer as any ulceration in the formation of which the acid gastric juice plays a part and the role of the gastric juice in the formation of these ulcers or the continuation of the ulcer is generally referred to as the peptic genesis of ulcer. Much evidence has accumulated to demonstrate the vast importance of the action of the gastric juice in the pathogenesis of ulcer.

This evidence, both clinical and experimental, has recently been exhaustively presented by Beuchner. This will be briefly reviewed.

Mann and Williamson, in surgical experiments on the dog, drained all of the duodenal secretions mixed with bile and pancreatic juice into the terminal portion of the ileum. By this arrangement all of the duodenal secretions are drained far enough from the stomach to prevent reflux of the duodenal content into the pyloric part of the stomach. The ileum received all of the gastric juice without any possibility of this being mixed with the alkaline duodenal secretion. Thus, neutralization or dilution of the acid gastric juice by the duodenal secretion was prevented. These dogs developed *typical chronic peptic ulcers* within the ileum where the acid gastric juice came into contact with the mucosa of the ileum.

Beuchner and his associates injected hypodermically histamin into rats. Histamin is the most powerful stimulating agent which we know for the production of gastric secretion. They were able to produce ulcers within the rumen or esophageal portion of the rats. Particularly regular was the appearance of these ulcers in the fasting animals.

By pouring 0.8 per cent to 1.5 per cent hydrochloric acid in the stomachs of cats, these same workers were able to produce an erosive gastritis which accorded in most details with that of acute peptic duodenitis.

They also repeated the sham feeding experiments of Silbermann in dogs over a considerable period of time. Acute peptic changes with ulcer formation in the stomach were obtained.

The common factor in all of the animal experiments just mentioned is the *absolute or relative excess of hydrochloric acid.* Many clinical facts are in agreement with these animal experiments.

One of the constant findings in pernicious anemia is an achlohydria. Stewart autopsied almost forty cases of pernicious anemia and found no cases of ulcer despite the facts that anemia favors the development of ulcers.

Post-operative jejunal ulcers almost invariably show the ulceration to be located within the area of the intestinal mucous membrane and usually very close to the gastro-enterostomy. This is the area where the undiluted and the non-neutralized acid gastric juice comes into contact with the intestinal mucosa.

Gastro-enterostomy for carcinoma of the stomach is not followed by jejunal ulcers, probably because gastric carcinoma is associated with low acidity or achlohydria.

Relative or absolute excess of gastric acidity is then in all probability one of the chief, if not the chief, factor in the pathogenesis of peptic ulcer.

Parlow was able to show by his pouch experiments on the dog that gastric juice as it flows from the gastric glands possesses a *constant* acidity of 0.5 HCl. This has recently been confirmed by the experiments of Hollander and Cowgill. It has been repeatedly shown that peptic ulceration is associated with an *excess* of free hydrochloric acid values. It is thus demonstrated that the excess of free hydrochloric acid and the hypersecretion of acid is brought about not by the concentration of the gastric juice but by the production of larger quantities of the fluid.

This excess production of hydrochloric acid which is so constantly found in peptic ulceration has never been satisfactorily explained. Various explanations are: the unsatisfactory activity of the protective measures at the disposal of the organism against high acid values, the failure of satisfactory neutralization by means of the regurgitation of the alkaline duodenal juices through the pylorus, and the presence of a supersecretion of nervous origin particularly through the vegetative nervous system.

Of late much has been written of the regular occurrence of a gastritis-like change in peptic ulcer which is localized in the pyloric end of the stomach. The European writers have for some while greatly stressed this finding but only very recently have the American writers begun to write of this occurrence. These changes are *constant* and are localized to the pyloric end of the stomach or the duodenum. In Europe they are found in almost one hundred per cent of the cases and the changes are *chronic* in two-thirds of the cases.

Lindau points out that these changes are not due to a secondary condition of irritation in the tissues surrounding the ulcer but are *primary* to, or parallel with, the initial stage of ulceration. He bases his conclusions on the fact that the gastritis is uniformly pronounced over the entire pyloric end of the stomach *irrespective* of the site of the ulcer and also because this type of gastritis with clinical symptoms of ulcer occurs in cases without ulcer. Lindau believes the extremely chronic nature of the course of ulcers with frequently appearing recurrences argues for a deeply rooted constitutional cause which is inherent in the individual himself.

This leads up to one of the chief points which I wish to emphasize. After a consideration of all of the etiologic factors which have been reviewed, it is clear there is some predisposing cause as yet unknown. We have come to think that the ulcer bearing patient belongs to a distinct type. It has been suggested that the susceptibility of the individual to peptic ulceration has to do with the individual's nervous organization and his physical make-up.

Smithies says that "In more than 95 per cent of instances, peptic ulcer is a visceral lesion formed as a complication of systemic, toxic, or environmental disturbances."

E. S. Judd states that "Experience seems to show that there is a tendency to the formation of ulcer in certain individuals and that no matter what treatment is undertaken recurrence is almost certain to take place. The factor responsible for this has not been determined and its discovery will yield valuable information concerning the etiology and pathogenesis of ulcer."

Draper, Dunn, and Seegal believe there is a definite physical type of individual who is predisposed to peptic ulcer.

Rivers and Eusterman, in reviewing the Mayo Clinic cases, show that 20 per cent of these cases have symptoms suggesting ulcer before the age of 20, and 61 per cent have a definite clinical ulcer picture before the age of 30. We thus see that ulcer begins early in life, usually before the factors of

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worry, alcohol, arteriosclerosis, and tobacco are present. Everyone has noted that ulcer usually occurs in the alert, driving, compelling, conscientious individual. Indeed, it is singular that the drifters, degenerates and never-do-wells escape peptic ulceration. This has lead to the consideration of the emotionally high strung, so-called vagotonic individual. We now believe there is a definite neurogenic factor in chronic peptic ulcer.

Perhaps the most widely quoted advocate of the neurogenic theory of the pathogenesis of peptic ulcer is Von Bergman, who advocates the so-called spasmodgenic theory. It is well known that lead poisoning is accompanied by a spasm which manifests itself clinically by colic. Peptic ulcer is very frequent among lead workers. Von Bergman believes that the erosions which are found in cases of meningitis and after operations on the brain are due to nervous causes. Gastric surgeons have noted that in gastric operations under local anesthesia, peristalsis takes place and they have noted a blanching, due to spasm of the blood vessels, occurs in the region of the ulcer. They have also noted the occurrence of a white, anemic area in the stomach serosa produced by stroking the stomach. This indicates that spasm in the stomach is a reality and Von Bergman believes that if one of these spasms lasts long enough an ischemic necrosis will be produced. Westphal produced erosions in the stomach by the use of such spasmogenic drugs as pilocarpin and physostogmine. One of the characteristic features of peptic ulcer is a hyper-secretion of the gastric juice; and another very frequent feature is hyper-peristalsis. Von Bergman believes that both hyper-secretion and hyper-peristalsis are due to disturbed nervous innervation.

Eppinger and Hess, in their studies of the vegetative nervous system, advocate the so-called vagatonic and sympatheticotonic syndromes. The vegetative organs have a dual nerve supply which is involuntary and antagonistic. This mutually antagonostic action provides a protective balance in function. One supply comes through the sympathetic division and the other through the vagal autonomic division. Should this nervous balance between the two divisions be disturbed, one of the other divisions gains ascendency; the group of symptoms resulting from such a nervous imbalance are termed vagotonia if the vagus gains ascendency, and if the sympathetic gains ascendency we have a clinical picture termed sympatheticotonia. In other words, vagotonia and sympatheticotonia are altered states of the respective nerve divisions.

Vagotonia is said to be due to a chronic state of vagal excitability and is characterized by increased peristalsis, increased pancreatic and duodenal secretions, cardio-spasm, pylorospasm, gastric hypersecretion, a slowed heart action and a contracted pupil. It is stated that there is a definite group of individuals having a vagotonic bias, such individuals being usually young adults, middle aged and male, with unstable nervous equilibrium. The sympatheticotonia type is said to be characterized by *hypo*chlorhydria, gastric atony, lessened peristalsis, neurosis, exaggerated emotivity, palpitation, tachycardia, and vasomotor lability. The sympatheticotonias are usually females and the symptoms manifested are chiefly in the nervous cardiovascular system. Von Bergman and others have criticized the statements of Eppinger and Hess, believing that the altered states of sympatheticotonia and vagotonia have little, if any, clinical significance.

Whether one accepts the nervous spasmogenic views of Von Bergman or the altered states of vagotonia and sympatheticotonia of Eppinger and Hess, or whether we recognize that both may play a part, it is clear that there is some neurogenic factor in chronic peptic ulcer, and experience points to the conclusion that the behavior of a peptic ulcer is in some way connected with the individuals nervous organization. The altered nervous mechanism manifests itself in hypermotility, hypersecretion, and spasticity of the pyloric sphincter, and until we can successfully correct these manifestations, the patient is not apt to be helped symptomatically. It is well known that patients resistant to treatment by diet, alkalies, and rest, often completely recover when they are made happy by some glad piece of news or some ocurrence.

Man is largely controlled by the brain, the autonomic nervous system, the adrenal glands, and the thyroid gland. These constitute what Crile terms "the controlling system of man." The thyroid gland effects the rate of activity of every cell and tissue of the body; this gland builds up the potential in the cells of the working organs and increases the conductivity of the tissues. In other words, the thyroid is the "pace setter." The discharge mechanism is through the adrenal glands and the autonomic nervous mechanism. The adrenal glands and

the nervous system in turn then use the energy which has been stored up with the thyroid as a pace maker. The sympathetic-suprarenal-thyroid group, which Crile terms the kinetic system, is controlled to a certain degree by the fore brain. Due to worry, stress, infection, exhaustion, and other causes, the brain, sympathetic-suprarenal-thyroid relationship loses its proper relationship and the kinetic system is stepped up as it were. The result of such an imbalance may manifest itself in hyperthyroidism, peptic ulcer, neurasthenia, or hypertension.

In reviewing 124 case histories of both peptic ulcer and hyperthyroidism, all of whom were operated on by our staff at Grace Hospital, Retreat for the Sick, and Sheltering Arms, I was impressed by the similarity of certain clinical features of peptic ulcer and hyperthyroidism.

The following facts regarding the peptic ulcer cases indicate the similarity of the symptoms and possibly the incidence and cause of peptic ulcer and the incidence and cause of hyperthyroidism: hypersecretion of acid is the central factor, if not the actual cause, of peptic ulcer. Hypersecretion of the thyroid hormone is the central factor, if not the actual cause of hyperthyroidism. Peptic ulcer and hyperthyroidism both tend to elect young adult life, and both flourish in the atmosphere of stress and striving. Hyperthyroidism and hyperacidity are induced and are augmented by over-work, worry, focal infection, autointoxication; both are associated with a changed personality; both are improved by a holiday and by glad news; both tend to chronicity or relapse. Neither is present among inferior races, the indolent, degenerates, or the insane; both flourish in individuals of ambition with keen desires, and among those who grieve and fret. In general, the incidence of both peptic ulcer and hyperthyroidism is highest in those men and women who are carrying the burden of civilization.

Moreover, as is indicated by the peculiarities of these individuals, the successful management of both the hyperthyroid and peptic ulcer requires a re-education, a new point of view regarding life, no less than rest, diet, medication, and surgery. In each of these conditions, therefore, the result of medical management which ranges from failure of relief of symptoms to permanent recovery, depends equally upon the personal equation of the medical advisor and upon the patient.

In view of these analogies, it is not surprising to find a like controversy as to the relative value of medical treatment and surgery in the treatment of both peptic ulcer and hyperthyroidism. Medical treatment plus rest relieves the symptoms of both conditions; both conditions are amenable to surgical therapy. In the case of both peptic ulcer and hyperthyroidism the freedom from symptoms is in direct relation to the length and faithfulness of adherence to a properly controlled hygienic regime. A return to the former environment or a breaking away from the prescribed regime is usually accompanied by a return of the symptoms of both conditions.

Crile has stated, "I believe the background of hyperthyroidism and the background of peptic ulcer are virtually identical * * *. The outstanding difference between these two diseases is that the brother gets the ulcer and the sister gets hyperthyroidism."

Because of the close inter-relationship between the adrenal glands and the thyroid gland, and because the adrenal glands so profoundly effect the mutual balance of function between these glands, Crile and his associates at the Cleveland Clinic have for several years performed what they term a de-kineticizing operation in certain selective types of cases. These cases have for the most part consisted of cases of recurrent, post-operative hyperthyroidism, cases of neurocirculatory asthenia, and cases of duodenal ulcer which have been intractable to treatment. This operation consists in a bilateral de-nervation of the suprarenal glands; the second de-nervation being performed about a week or more after the first one. Crile does not believe that regeneration of these severed nerves will take place; he believes the nerves to be *efferent*. He claims that by thus bilaterally dividing the nerves to the suprarenal glands, he removes the trigger, as it were, to the discharging mechanism of the adrenal autonomic nervous system. As he terms it, this operation slows down the adrenal autonomic nervous system and sets it in a lower gear.

He reports 126 cases in which this operation has been performed with an operative mortality of only two deaths, or 1.6 per cent.

His results in the resistant post-operative, recurrent cases of hyperthyroidism have been most gratifying. The patients were greatly benefited by the operation; the entire exophthalmic goitre picture dis-

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appeared following the division of the nerves "including hyperplasia and increased metabolic rate."

Fifteen cases of intractable duodenal ulcer were subjected to the bilateral division of the nerves to the suprarenal glands. The symptoms of peptic ulcer were immediately relieved in all of the operative cases. It is also significant that the acidity of the gastric contents of all of the cases was reduced post-operatively.

The cases presented by Dr. Crile are, of course, too few and any definite conclusions should not be based on so few cases. These operative results do, though, offer a problem for further study, particularly in the field of pathologic physiology.

It would seem that the influence of the thyroid gland in the pathogenesis of peptic ulcer is not one of *direct* cause and effect, that is, it would seem that a hyperfunction of the thyroid tissue does not directly increase one's susceptibility to ulceration. I could find no quoted large statistics of the incidence of peptic ulcer in cases of thyrotoxicosis. The incidence of peptic ulcer in our cases of hyperthyroidism was no higher than the incidence of peptic ulcer in general.

Gastric analyses were done on but a few of the cases of hyperthyroidism which were reviewed, so that these cases on whom gastric analyses were made were too few on which to base any definite conclusions as to the effect of hyperthyroidism on gastric secretion.

Lewit noted increased gastric secretion after administration of thyroid extract to human subjects. He also did gastric analyses on a series of cases with hyperthyroidism, and stated that these cases showed hyperacidity and hypersecretion.

Animal experimentation is not in agreement with the report of Lewit.

Green and Kunde studied the acidity of gastric contents of the normal, cretin, and hyperthyroid rabbits. They produced cretinism in the rabbit by the total extirpation of the thyroid about three weeks after birth and studied the gastric contents six months after operation. They produced hyperthyroidism by feeding 260 to 290 mg. of desiccated thyroid, daily, to each rabbit and they made gastric analyses two to six weeks later. The hydrochloric acid content of the cretin rabbit was neither depressed below normal nor was it increased. They found a slight but appreciable *decrease* of the hydrochloric values of the gastric contents after the experimental production of hyperthyroidism.

Chang and Sloan made independent animal experimental studies and also concluded that experimental hyperthyroidism depressed gastric secretion both in amount and acidity.

The influence of hyperthyroidism upon the etiology and pathogenesis of peptic ulceration, if any, would thus seem to be an *indirect* relationship. The relationship seems to be one of common background of both conditions. The close similarity of many clinical features of both peptic ulcer and hyperthyroidism has been reviewed. It would seem that some common influence is at work, possibly through the sympathetic-adrenal-thyroid chain which produces a hyperthyroidism in one individual and a peptic ulcer in another. It may be that this dysfunction of the so-called kinetic chain is in reality what we have in the past recognized as the ulcer type of individual and have called the ulcer diathesis. This common factor, which serves to disorganize the proper relationship in the sympathetic-adrenal-thyroid function, may explain the cause of the intractably treated and recurrent cases of peptic ulceration. I have presented no specific proof for such a conclusion but have attempted to review all of the etiologic factors in peptic ulceration and attempted to show that there is some pre-disposing cause as yet unknown, and to suspect the possibility of a common background of peptic ulcer and hyperthyroidism.

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UNUSUAL INDICATIONS FOR CESAREAN SECTION.*

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The unusual always attracts a certain amount of attention. Some of the cases to which attention is called here are sufficiently rare to be of some interest on this account. They form a part of a group, which if not recognized and successfully treated make a generous contribution to the mortality statistics, and for this reason they are of more significance. These mortality statistics have been the subject of much discussion in recent years, and apparently without much success. As to the cause of this failure there is little agreement.

Prenatal care has been harped on as the cure-all, and all agree that if efficiently carried out in all cases it would eliminate many troubles. But no matter what prenatal care the patient has had she must be delivered. In a large percentage of cases the patient will deliver herself with fairly satisfactory results as to mortality, but there is a definite group which will need help and it is here that there is a wide divergence of opinion and practice. Some have apparently been so enthusiastic about Cesarean section that this procedure has apparently been used as an attempted avenue of escape from all mechanical problems, and of course the results have been bad.

Plass, in a report made to the White House Con-

*Read before the sixty-sixth annual session of the Medical Society of Virginia, at Norfolk, October 15-17, 1935.

ference in 1931, makes a strong indictment of this operation as well as forceps. The investigation revealed a mortality rate in Cesarean section from 1.7 at the Chicago Lying-in Hospital to 16.1 per cent in New Orleans. His complaint of forceps is nearly as severe, and concludes that the poor obstetric statistics are due to these causes. He says "that for permanent and lasting relief a return to first principles is necessary and that it should be taught every interference with normal labor carries a definite risk."

I do not concede that there is only one right and successful method of managing normal labor. This depends largely on the training, experience and skill of the individual; but normal labor is not the one which gives the problems which ordinarily furnish the deaths. It is the unusual or abnormal case which produces this result. It would appear to be reasonable to expect that the light of continued experience would lead the way here to some extent. It is with this thought in mind that the facts are presented regarding a small group of complicated cases, some very unusual, which have been treated by Cesarean section.

In order to fix the relationship of these cases to the obstetrical problem as a whole the sections here considered are placed in two groups. The first group, thirty-two in number, are all among 1,200 recent consecutive private obstetric patients who have been under observation during pregnancy as well as delivery. The other group, twenty-four, were treated during the same period of time, but were referred cases and seen by me after the trouble began. It has seemed helpful to consider these under several heads as shown in the illustration.

Section was originally thought of as a means of treatment of contracted pelvis. In this series contracted pelvis was the indication for section in twenty out of thirty-four cases, and in the referred cases in eleven out of twenty-four. It is apparent that the unusual constitute a rather large percentage of the whole. I will only attempt here to call attention to some of the more uncommon indications.

Dystocia Following Intra-Uterine Use of Radium: Kane searched the literature in 1931 and could find only three cases. In July, 1934, he had collected three more. A Porro section was done for three of these; section was done in two other cases, the type not being stated. The other was delivered by the vagina. The operation was difficult and the baby's head was separated from the body by traction, although the baby weighed only 3 pounds 8 ounces. Only one baby survived.

Two of my sections were post-radium cases. The first case, age 35, gravida 3, had been treated by radium on account of bleeding; some type of cervix operation, probably amputation, done several years before and a year or two following the birth of her last child. On first examination it was observed that no cervix could be seen or palpated; the vaginal vault was smooth and contained much dense fibrous tissue. The os was only a minute opening. When she was full term the membrane ruptured before admission. As there seemed to be no prospect of successful vaginal delivery a section was done. The lower cervical section was done because the membranes had been ruptured several days before. The lower uterine segment and cervix was almost an inch thick and was very hard and fibrous. The bleeding was furious and difficult to control. It is the only case I have done in which the bleeding was definitely concerning. I would have much preferred a Porro but the patient wanted other children and would not consent. Baby and mother recovered.

The other case, age 24, gravida 1, had been previously treated by me for functional bleeding. Every other known method had been used without success when 400 mg. hours of radium was used in preference to hysterectomy. At about seven months gestation this patient began to bleed slightly. The membrane ruptured spontaneously. The cervix was long and hard. Section was done at this time on account of placenta praevia. The lower uterine segment presented the same condition as in case No. 1. This baby lived several days and died. Autopsy showed deformed aorta as being the cause of death. Though the cases reported are very few, the evidence seems to be convincing that the use of radium in the child-bearing period may cause a severe type of dystocia which will likely require section.

Deformed Uterus: There are a considerable number of types of deformed uterus caused by failure of complete fusion of the Mullerian ducts. Four of my abdominal deliveries have been on this account. Two of these might be classed as double uterus; one, the type classified by DeLee as uterus duplex bicornis cum vagina septa. The other had a double vagina and two cervices and separate uter-

ine cavities. The two uterine cavities were separated only by a septum.

Frank R. Smith, 1931, reported a study of the records of the New York Lying-In Hospital and concluded that all types of double uteri occur about once in 1,500 cases of pregnancy.

One of my cases had been under my care during pregnancy and was known to have a double uterus. She had one three months abortion before this pregnancy. The relation of a double uterus to prognosis and management of labor is important. There is no doubt that many of these cases can be delivered by vagina without difficulty, but it is not surprising that the records will show on the whole very poor results. Uterine inertia, obstructed labor, sepsis, hemorrhage and other complications have been common. It is my impression that the mortality has been high. My patient was allowed to go into labor but the progress seemed doubtful and section was done with satisfactory results.

The second case was referred after the patient had been in labor about twelve hours without progress. The attending physician noticed the double vagina and rightly concluded that a double uterus might be the cause of the trouble. A section was done. The deformity was found to be that described by DeLee as uterus duplex bicornis with septate vagina. The non-pregnant fundus was in the pelvis and obstructing labor. The pregnant uterus was removed. Both mother and baby recovered.

Two of my deformity cases were classed as pregnancy in the rudimentary horn. This is a somewhat rarer condition. Mauriceau and Vassal, 1669, reported the first case. Paul Munde reported the first American case in 1890. Koplowitz, 1929, could find only twelve cases in American literature, though a total of 145 cases had been tabulated. Several cases have been reported during the past few years. It is quite possible that it is more common than the literature would indicate. Sanger reported a mortality of 87 per cent. This has been lowered, as prompt operation has been more generally available, but it remains a most dangerous condition.

My first case was a gravida 1, age 20, about five months pregnant. She had been seized with a terrific abdominal pain twenty-four hours before admission, and on account of being on an ocean steamer was not immediately treated. She had all symptoms of abdominal hemorrhage. Immediate abdominal section was done, a transfusion being given simultaneously. The abdomen was filled with clots and blood. A four and a half months foetus was found free in the abdomen. This was attached by the cord to the placenta which was partly expelled from what appeared to be the uterus. On further examination this mass was found to be to the left of an apparently normal uterus, and attached to it near the cornua by a thick pedicle which contained a small canal which was continuous with the endometrium of the uterus and the endometrium of the horn. The horn was removed and the tube and round ligament sutured to the uterus at the cornua. This patient has since been delivered of a living baby by section in New York, where she lives.

The second case was seen in early pregnancy and a mass noted to right of uterus that was smooth and soft, and felt like an ovarian cyst. I thought that it might contain the pregnancy, and advised removal. The patient consulted two very experienced physicians who advised against it, and then went to Hopkins, where, according to her story, she was again told that operation was not considered best. Naturally she refused operation. When she was full term she was admitted with evidence of abdominal hemorrhage. Immediate operation showed the abdomen was filled with blood and blood clots. The mass containing the pregnancy was attached to the uterus at the right cornua by a pedicle ½ inch in diameter. The bleeding had been due to a ruptured vein in the covering of the mass. A living baby was delivered.

About 90 per cent of pregnancies in the rudimentary horn rupture at about four and a half months. Several have gone to full term, but I can find no record of any living child. My baby unfortunately developed cerebral hemorrhage and died on the third day. These cases stress the desirability of giving serious consideration to any extra-uterine masses found in early pregnancy. This evidently is not the prevailing practice today.

Torsion of the Tube Complicating Labor: This patient, a referred case, gravida 3, presented evidence of acute abdomen at full term. A tube was found to be twisted on itself like a rope and was gangrenous. It was removed and a low cervical section was done. This patient has since been delivered normally by vagina. I have not been able to find the record of a similar case.

Pregnancy After Vesico-Vaginal Fistula: Gravida

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3. I had repaired a cervico-vesical fistula one year before. A Monroe-Kerr transverse cervical section was done to avoid the lower cervical region. The results were satisfactory.

Eclampsia: Three cases.

There was one case of eclampsia in my 1,200 labors. This was not treated by section. Among the referred cases three required sections. Section is not used in a routine treatment for eclampsia. The usual medical treatment was given in each case and convulsions controlled. If delivery was indicated later and condition of cervix or possible disproportion made it necessary, section was done.

Abruptio Placenta: There were two of these. Both were near death, requiring transfusion and operation immediately to save life. One was a primipara and the other para five. A Porro was done for the latter. She left the operating room in good condition and after one hour developed severe shock. She was apparently dead when Dr. Nicholls, who was in charge of her at that time, gave her adrenalin in the heart, following which she was resuscitated.

Fibroids Obstructing Labor: Two cases, both primipara, and each 35 years old. A fibroid could not be palpated at the initial examination in early pregnancy, though the development of the uterus was somewhat more rapid than normal. Both complained of persistent pain in the right lower pelvis, where the tumor was located, and during several weeks before delivery the head rested in the left iliac fossa. The fibroid was really a part of the cervix and effectually prevented the head entering the pelvis. A Porro section was done in both cases and a living child and mother resulted.

The record of still-born and neo-natal deaths in the 1,200 labors, including the sections, are given in the illustrations. This includes deaths from all causes in pregnancies of six months or over. There were twenty of these deaths, or 1.6. Five only were associated with delivery; two still-born and three neo-natal, or .41 per cent.

The total Cesarean sections in 1,200 labors was 2.7 per cent. There were no maternal deaths in the 1,200 labors or sections. It is significant that there has not been a mortality among the referred as well as private groups. That no doubt is due to the high type of management given them by attending physicians.

It is obvious that so small a series of cases does not prove anything. Some of these cases were near fatalities, and several might easily have been fatal, but if 1,200 can be delivered without a maternal death (and no doubt many other obstetricians can show a similar or larger series without mortality), it would not seem to be necessary for as many as sixty-five to seventy to die in each 10,000 live births. If this mortality is to be reduced the unusual case must receive careful attention.

UNUSUAL INDICATIONS FOR CESAREAN SECTION

1. Dystocia following intra-uterine use of radium —Two cases.
2. Deformed uterus:
   1. Double uterus
      a. Uterus duplex bicornis cum vaginae septa.
      b. Uterus septus duplex cum vaginae septa.
   2. Pregnancy in rudimentary horn—uterus unicornis with rudimentary horn.
3. Torsion of tube complicating labor.
4. Pregnancy after cervico-vesical fistula—One case.
5. Eclampsia—Three cases.
6. Abruptio placenta—Two cases.
7. Fibroids obstructing labor—Two cases.

DISCUSSION

DR. M. P. RUCKER, Richmond: Dr. Andrews said in his paper many important things. He asked me to discuss his paper and to open the discussion because he knew, I think, that I wouldn't agree with all he said.

Dr. Andrews and Dr. Nicholls are to be congratulated upon their results. Just how good their fetal results were I was unable to determine. Four babies are stated to have survived and three to have died. Nothing is said of the others.

As to the infant that died of a deformed aorta, I wish that Dr. Andrews, in closing, would describe the deformity and also tell us if he thinks that the radium treatment that the mother received had anything to do with it. This is an important question and all cases of deformity after radiation treatment should be reported in detail. The baby that died of cerebral hemorrhage illustrates that these cases are not always due to trauma.

My experience with delivery after radium treatment is very limited, but differs from that of the authors. The only case that I recall was a patient of Dr. Whitfield's. She was forty-one years of age when delivered in 1930. Her youngest child was eight years old. In 1926 Dr. Willis amputated her cervix. Subsequently she was treated with radium in Philadelphia. In 1930 her uterus began to enlarge rapidly and Dr. Horsley did a laparotomy on suspicion that she had a cancer of the uterus. He found a pregnant uterus and closed up the abdomen

after removing the appendix. The patient had a cervix very much like the one Dr. Andrews described. Dr. Whitfield and I discussed the probable outcome on a number of occasions. The patient was delivered by Dr. Whitfield on July 10, 1930, of a eight and one-half pound boy. The labor was almost a precipitate one.

I recall a similar case in which the cervix had been removed by a "cancer doctor" with some sort of paste. The upper part of the vagina was left a mass of scar tissue, and neither her physician nor I thought she could be delivered per vaginam. Nevertheless, she had a quick, easy, natural delivery, which makes me think that Nature is a better obstetrician than we sometimes give her credit for.

Pre-eclampsia is given as the indication in three of the authors' cases. I am aware that a number of other authorities give this as an indication for abdominal delivery. I cannot follow their reasoning, for, as a class, the toxic patients respond to induction of labor better than any others. It is so simple to rupture the membranes and leave the rest to Nature. Three cases of eclampsia are listed among the sections, but the authors say that the eclampsia was controlled by medical treatment and afterwards, if the pelvis or the condition of the cervix warranted it, a Caesarean operation is done. If such be the case they should be classed under disproportion or dystocia.

For abruptio placenta, I have never found it necessary to do a section. At the Boston Lying-In Hospital the results in the treatment of these cases with Caesarean sections were so poor that Smith, who reported this series, some 1,500 in number, seriously questioned the advisability of such treatment. At the Rotunda Hospital in Dublin the results improved decidedly when they stopped doing sections on these cases.

Finally, there is a side to Caesarean section that should be emphasized when one is discussing relative indications and that is the late results of the operation. In a recent paper by Haultain and others (*Edin. M. J.*, September, 1934) 463 sections at the Royal Maternity and Simpson Memorial Hospital in the years 1925 to 1931, inclusive, were studied. They were able to follow 174. Of these, 25 per cent complained of abdominal pain. Ventral hernia occurred in 7.2 per cent, and in 63.6 per cent of the cases that had not been purposely sterilized, no further pregnancy occurred. Five cases had subsequent rupture of the uterus. The authors were unable to explain the sterility, but thought it so real that one should hesitate to recommend a section in placenta previa, for instance, where the chances of losing the baby were great because the chances of the mother having another baby were slight.

The old adage, "Once a Caesarean, always a Caesarean" no longer holds good, but "Once a Caesarean, always a hospital delivery" is a wise rule.

DR. ANDREWS, closing his discussion: Regarding the deformed aorta and blood vessels of chest in the post-radium case, I do not know whether the radium had anything to do with this. I believe no one with the present available data could tell. I did not see the autopsy but Dr. Nicholls did and I will ask him to say something about it.

Dr. Rucker objects to my use of Caesarean section in these cases of abruptio placenta and the cervical contraction after radium. He did not see these individual cases, and if he had, he would, I think, have advised the same course. What he has to say on the subject in general is no doubt justified. There are some cases of premature separation which are successfully treated by other methods than section, but it is my belief that some of these fulminating cases are saved by section if one is prepared to give skilful surgical service with transfusion, etc. Apparently some object to this. I know Dr. Rucker has had a large experience and I would have been glad if he had given his own mortality figures and experience.

The severe after complications in section which he speaks of we have not encountered. Sterility after section has not given me trouble and I see no reason why it should occur with a clean operation. In fact, I have several women whose tubes were separated at section and who afterward became pregnant.

DR. RICHARD B. NICHOLLS, closing discussion: I am sorry that Dr. Andrews didn't have the opportunity to view the autopsy.

I don't remember exactly what the findings were. The baby died last May and it has been some time since I reviewed it, but as I remember, I believe there was no blood supply going to the right lung at all. There was quite a mix-up in the blood vessels coming from the aorta, and from the pulmonary blood supply. The baby died on the third day after considerable struggling to keep it alive, with the use of the Drinker respirator, and so on.

Dr. McGlinn, of Philadelphia, reported a series of three or four cases that died which he thinks should have been treated by Caesarean section. He was advocating the use of Caesarean section more frequently in the management of premature abruptio placenta.

My experience has been very limited, but the ones that I have seen that have recovered have been ones that have been treated by Caesarean section. The Caesarean section that Dr. Andrews has been doing, and to which I have been converted, is the low flap section.

If an obstetrician goes in with the idea of possible hysterectomy in view of the fact that he has a case of premature separation of placenta, the low flap offers a much easier hysterectomy because one always must reflect the bladder flap and, in so doing, covering over the cervical stump is much more easily done.

I think that a lot of talk has been given about prenatal care and over-emphasized, and I think that such emphasis is due. But there has been a lack in the emphasis of the management of labor, and of the after-care. This is of particular note here. Premature sepa-

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ration of placenta has a mortality rate between 40 and 60 per cent. I think that right in that particular group there is an ideal place to start in cutting down the mortality rate. No matter how much pre-natal care a patient gets, if labor is not managed properly, many things can happen that will unquestionably raise the mortality rate.

TETANUS—A GROUP CASE STUDY.

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Traumatic injuries of every conceivable type are encountered in general hospitals. It becomes almost routine to give prophylactically antitetanic serum to patients that have even minor skin injuries immediately after they enter the hospital. The opportunity of using serum as a prophylactic measure by physicians outside of the hospital is not as easy as it would appear. The patient refuses serum either because of the prohibitive cost or in the belief that his injury is too trivial. Very frequently the physician deems the injury not serious enough. Moreover, it has become well-known amongst the laity that serum sickness often follows inoculation.

In an attempt to revive interest in a disease that plays such havoc with the individual and carries such a very high mortality, and which may be prevented or at least attenuated by administration of prophylactic serum, this report, that is based upon the patients seen in the Hospital Division of the Medical College of Virginia, is submitted.

Incidence: In the past five years twenty-eight cases of tetanus were encountered amongst 40,000 admissions. The majority of cases were between the ages of ten to twenty, but all ages were represented from a baby one week old to a woman of fifty-seven. Only one of these cases had received antitetanic serum before admission.

Type of Injury: The injury considered ideal for the inoculation of the individual with tetanus is a penetrating nail wound, preferably by a rusty nail. Although this assumption is quite true, there were many sources and kinds of injuries other than nail wounds in this series. At times it was most difficult to obtain a history of any trauma prior to the onset of the disease.

In our cases the types of injuries were as follows: abrasions and lacerations, 9; nail puncture wounds, 7; blank cartridge explosions, 6; splinters, 2; umbilical cord infection, 1; ulcer of back, 1; blister, 1; and in one case no evidence of trauma could be found. Obviously the most common injuries were to the extremities; this in itself apparently had no influence on the course or prognosis of the disease.

Incubation Period and Symptoms: In our series of cases those that recovered had an incubation period of 9.3 days except for one that had received prophylactic serum in which the incubation period was 34 days. The average incubation period of those that died was 6.4 days. The cases that recovered were symptom free from fourteen to twenty-one days after entering the hospital. The fatal cases remained in the hospital an average of 4.8 days.

Following the prodromal period of insomnia, irritability, headache, chilliness, and general malaise, the younger patients frequently developed convulsions. All patients on admission had characteristic symptoms of severe tetanus, i. e., trismus, rigidity of the neck, spasticity or rigidity of the abdomen and extremities with hyperactive reflexes. The average leukocye count of all cases was 10,200 with a definite increase in the polymorphonuclears. The temperature on admission of most cases was elevated, averaging 101 degrees F. by rectum. After initial serum therapy, a rise of one to two degrees occurred with a fall to the original level after twenty-four hours. All of the fatal cases developed a high fever before succumbing, the temperature rising abruptly as coma deepened, the terminal state being comparable to cases of cerebral hemorrhage in which, as the bleeding continues, coma deepens and the temperature rises to 105 or 106 degrees.

Complications: In the patients that recovered complications were rare. A child developed transitory foot drop, another a left facial weakness, three patients became temporarily psychotic, returning to

their normal mental status before leaving the hospital. Bronchopneumonia was the terminal event in three cases.

Mortality: In this series twelve patients succumbed out of twenty-eight, a mortality of 42.9 per cent. Miller and Rogers[1] have recently studied a large group of cases in which their mortality was 45.5 per cent. The primary injuries in those who died were blank cartridge explosions, 5; abrasions and lacerations, 3; nail puncture wounds, 2; blister, 1; and umbilical cord infection, 1.

The following were considered predisposing factors in our fatal cases:

1. None had received prophylactic serum.
2. All had well advanced tetanus when admitted to the hospital.
3. Five of the cases had been injured by blank cartridge explosions and four of these were dying on admission, succumbing within twenty-four hours.

Treatment: The problem of therapy in tetanus resolves itself into these groups[2]:

1. General management
2. Local surgical treatment of the wound
3. Symptomatic treatment
4. Serotherapy

All patients were isolated in dark, quiet rooms with precautionary measures as to disposal of excreta. Liquid diets were administered to those cases that could swallow; otherwise, feeding was by nasal tube, proctoclysis, or by parenteral injections of fluids.

The primary site of infection was usually widely incised and the surrounding tissues infiltrated with five to ten thousand units of antitetanus. Constant irrigation of the incised wound with potassium permanganate 1-4000 was begun.

Complete relaxation of the patient was almost compulsory for recovery. We found that the barbital derivatives such as phenobarbital and sodium amytal controlled paroxysms and rested patients better than any of the other sedatives or anodynes. Sodium bromide and chloral hydrate were also quite efficacious. Children were prone to have convulsions; they frequently were relieved by intravenous injections of magnesium sulphate, or avertin, 60 mgms. per kilo. by rectum.

Routes of administration of serum were intramuscular, intravenous, and intraspinal. The routine followed was to administer a skin sensitization dose intradermally. If not sensitive, 20,000 units of antitetanus serum were injected intramuscularly and 20,000 units intravenously. Both intravenous and intramuscular injections were continued daily for several days, the average patient receiving 100 to 200 thousand units. Intraspinal injections of serum were given to several cases, but, due to the opisthotonos, and extreme irritability encountered, this route of administration was discontinued. It may be added that Miller and Rogers quote in their resumé the works of Weed and Hughson[3] in which there is conclusive evidence that intraspinal injection of serum has no value.

Six of our cases developed late serum reactions, all being eventually relieved by soda baths and small doses of ephedrine sulphate orally.

ABSTRACT OF CASES

I. Ten-year-old colored male, traumatized calf of left leg with a nail seven days before entrance to hospital. Physical findings on admission: rigid neck, opisthotonos, unable to open mouth, rigid abdomen. Treatment: crucial incisions about the wound area with infiltration of 5,000 units A. T. S.; 60,000 units intravenously; 25,000 units intraspinally; 40,00 units intramuscularly; total: 130,000 units. Recovery.

II. Sixteen-year-old white male. Blank cartridge exploded in his hand nine days before entrance to hospital. Physical findings on admission: trismus, hyperactive deep reflexes, rigid neck and abdomen. Treatment: 130,000 units A. T. S. intramuscularly; 25,000 units intravenously; total: 155,000 units. Recovery.

III. Twenty-five-year-old colored female received a compound fracture of left tibia in an automobile accident. She was given 1,500 units of A. T. S. as a prophylactic dose. Thirty-four days after admission the patient developed a stiffness of her jaws and neck. Treatment: 60,000 units A. T. S., intravenously; 10,000 units A. T. S. intramuscularly; total: 70,000 units. Recovery.

IV. Thirteen-year-old colored male. Blank cartridge exploded in his hand seven days before entrance. Physical examination on admission: trismus, stiff neck, and rigid abdomen. Treatment: incision and exploration of wound in hand with infiltration of 10,000 units A. T. S. about the wound; 110,000 units A. T. S. intravenously; 70,000 units intramuscularly; total: 190,000 units A. T. S.; avertin, 60 mgm. per kilo of body weight. Died.

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V. Thirty-eight-year-old colored male. Abrasion of dorsum of left hand five days before entrance. Physical examination on admission: trismus, stiff neck, rigid abdomen. Treatment: 110,000 units A. T. S. intramuscularly; 60,000 units intravenously; total: 170,000 units. Died. Spinal fluid: no cells, slight trace of globulin.

VI. Thirteen-year-old colored male. Blank cartridge exploded in his hand six days before entrance. Physical examination on admission: opisthotonos, rigid abdomen, trismus, spasticity of all muscles of the body, stiff neck. Treatment: crucial incision of wound with infiltration of wound with 10,000 units A. T. S.; 50,000 units A. T. S. intravenously; 10,000 units intramuscularly; total: 70,000 units A. T. S. Died.

VII. Fourteen-year-old colored male. Blank cartridge exploded injuring hand six days before entrance. Physical examination on admission: patient having convulsions, trismus, opisthotonos, rigid abdomen, temperature 106 degrees. Patient died while in Emergency Room.

VIII. Twenty-eight-year-old white male. Injury to right hand with piece of glass ten days before entrance. Physical examination on admission: trismus, rigid neck, rigid abdomen, hyperactive deep reflexes. Treatment: 40,000 units A. T. S. intramuscularly; 60,000 units intravenously; total: 100,000 units. Recovery.

IX. Thirteen-year-old white male. Blank cartridge exploded injuring left hand six days before entrance. Physical examination on admission: trismus, rigid neck, rigid abdomen, opisthotonos, hyperactive deep reflexes. Treatment: incision of hand; infiltration of site of wound with 10,000 units A. T. S.; 10,000 units A. T. S. intravenously; total: 20,000 units A. T. S. The patient died several hours after admission.

X. Nine-year-old white male. Nail puncture on sole of right foot ten days before entrance. Physical examination on admission: trismus, rigid neck and abdomen. Treatment: incision of wound with debridement; 80,000 units A. T. S. intramuscularly; 20,000 units intravenously; total: 100,000 units A. T. S. Recovery.

XI. Nineteen-year-old colored male. Abrasion of right knee fourteen days before entrance. Physical examination on admission: rigid neck, opisthotonos, trismus, rigid abdomen. Treatment: 15,000 units A. T. S. injected about site of abrasion; 100,000 units A. T. S. intravenously; 30,000 units intramuscularly; total: 145,000 units A. T. S. Recovery.

XII. Twelve-year-old white male. Nail puncture in sole of left foot seven days before entrance. Physical examination on admission: trismus, rigid neck, hyperactive reflexes. Treatment: 10,000 units A. T. S. injected about site of wound; 190,000 units A. T. S. intravenously; 40,000 units A. T. S. intramuscularly; total: 240,00 units A. T. S.; 60 mgm. avertin per kilo of body weight. Patient developed bilateral foot drop for which casts were applied. Recovery.

XIII. Thirty-seven-year-old colored male. Wooden splinter in finger nine days before entrance. Physical examination on admission: trismus, rigidity of neck and abdomen, hyperactive deep reflexes. Treatment: 10,000 units A. T. S. about site of injury; 80,000 units A. T. S. intravenously; 20,000 units A. T. S. intramuscularly; total: 110,000 units A. T. S. Recovery.

XIV. Ten-year-old colored male. Laceration of toe twelve days before entrance. Physical examination on admission: convulsions, trismus, hyperactive deep reflexes. Treatment: 20,000 units A. T. S. intravenously; 20,000 units A. T. S. intramuscularly; total: 40,000 units. Recovery.

XV. Ten-year-old colored male. Blank cartridge exploded, injuring left hand eight days before entrance. Physical examination on admission: opisthotonos, trismus, rigid neck, rigid abdomen, hyperactive deep reflexes. Treatment: incision of wound; 40,000 units A. T. S. intravenously; 20,000 units A. T. S. intraspinally; total: 60,000 units. Patient died twenty-four hours after admission.

XVI. Seventeen-year-old colored male. No available history of any injury. Physical examination on admission: trismus, rigidity of neck, rigid abdomen, hyperactive deep reflexes. Treatment: 80,000 units A. T. S. intravenously; 40,000 units A. T. S. intramuscularly; total: 120,000 units A. T. S. Spinal fluid: no cells, negative globulin. Recovery.

XVII. Six-year-old white male. Abrasion to right index finger nine days before entrance. Physical examination on admission: trismus, rigid neck, rigid abdomen. Treatment: 40 mgm. avertin per kilo body weight; 20,000 units A. T. S. intra-

muscularly; 10,000 units A. T. S. intravenously; total: 30,000 units A. T. S. Recovery.

XVIII. Thirty-six-year-old colored male. Abrasion to right great toe twenty-one days before entrance. Physical examination on admission: trismus, rigid neck and abdomen, hyperactive deep reflexes. Treatment: incision of site of injury; infiltration with 10,000 units A. T. S.; 80,000 units A. T. S. intravenously; 50,000 units A. T. S. intramuscularly; total: 140,000 units A. T. S. Recovery.

XIX. Ten-year-old colored male. Abrasion left foot fourteen days before entrance. Physical examination on admission: convulsions, trismus, rigid neck, rigid abdomen. Treatment: avertin 50 mgm. per kilo of body weight; 60,000 units A. T. S. intravenously; 40,000 units A. T. S. intramuscularly; total: 100,000 units A. T. S. Patient developed transitory left facial paralysis that disappeared after several days. Recovery.

XX. Four-year-old white male. Blister on right heel fourteen days before entrance. Physical examination on admission: trismus, opisthotonos, rigid neck. Treatment: 10,000 units A. T. S. intravenously; 10,000 units A. T. S. intramuscularly; total: 20,000 units A. T. S. Spinal fluid: 2 cells, negative globulin. Recovery.

XXI. Three-year-old white male. Abrasion left foot six days before entrance. Physical examination on admission: opisthotonos, spasticity of muscles, rigid neck. Treatment: 20,000 units A. T. S. intramuscularly. Recovery.

XXII. Fifty-year-old colored male. Nail puncture left great toe eleven days before entrance. Physical examination on admission: trismus, rigid neck, rigid abdomen, hyperactive deep reflexes. Treatment: incision at site of injury with infiltration with 10,000 units of A. T. S.; 40,000 units A. T. S. intravenously; 20,000 units A. T. S. intramuscularly; total: 70,000 units A. T. S. Patient died within twenty-four hours of admission.

XXIII. One-week-old white male. At birth the umbilical cord was tied and then covered with soot to stop bleeding. Physical examination on admission: spasticity and trismus. Treatment: 50,000 units A. T. S. intramuscularly. Spinal fluid cell count: 10. Died.

XXIV. Ten-year-old colored female. Nail puncture of foot seven days before entrance. Physical examination on admission: rigidity of neck, trismus, generalized spasticity, rigid abdomen, hyperactive deep reflexes. Treatment: incision of wound; 60,000 units A. T. S. intramuscularly. Patient died two days after admission.

XXV. Eleven-year-old colored female. Nail puncture in right great toe seven days before entrance. Physical examination on admission: trismus, spasticity about the body, hyperactive deep reflexes. Treatment: 15,000 units A. T. S. intramuscularly. Recovery.

XXVI. Fifty-eight-year-old white female. Wooden splinter in left thumb eleven days before entrance. Physical examination on admission: trismus, spasticity generalized, opisthotonos, rigid abdomen, hyperactive deep reflexes. Treatment: incision of thumb; 80,000 units A. T. S. intravenously; 40,000 units A. T. S. intramuscularly; total: 120,000 units A. T. S. Patient died four days after admission.

XXVII. Thirty-six-year-old colored male. Traumatic abrasion to foot while plowing five days before entrance. Physical examination on admission: trismus, rigid neck, spastic abdomen. Treatment: 40,000 units A. T. S. intravenously; 40,000 units A. T. S. intramuscularly; total: 80,000 units A. T. S. Patient died several hours after admission.

XXVIII. Forty-six-year-old colored female. Ulcer of back fourteen days before entrance. Physical examination on admission: trismus, opisthotonos, spasticity of abdomen. Treatment: 60,000 units A. T. S. intravenously; 30,000 units A. T. S. intramuscularly. Died ten days after admission.

SUMMARY AND CONCLUSIONS

1. In a study of twenty-eight cases of tetanus observed over a period of five years, the mortality was 42.9 per cent.

2. It was felt that probably the most dangerous type of injury was a blank cartridge explosion as five out of six patients died who had received this type of injury.

3. After the onset of tetanus, wide incision of the original site of injury followed by infiltration of surrounding tissues with anti-tetanus and massive doses of serum intravenously and intramuscularly are advocated.

4. Sodium amytal is considered the drug of choice for relaxation of the patient.

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5. The necessity of educating both layman and physician to the dangers of trivial wounds and the value of prophylactic serum is obvious. Only one of our cases had received anti-tetanus before admission.

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A DETAILED STUDY OF 100 CONSECUTIVE CASES OF ALLERGY AS EVIDENCED BY ASTHMA AND HAY FEVER.*

K. D. GRAVES, M. D.,
Roanoke, Va.

About ten years ago I made a study of the causative factor and results in fifty consecutive case of bronchial asthma.[1] Tonight I wish to report my results on 100 recent consecutive cases of asthma, hay fever or both, and to compare these with my 1925 report.

The cases in this report are not subdivided into the symptomatic classifications of asthma and hay fever, as the causative factors and the treatment is more or less similar if not identical. Following is a list of the items to which the patients were sensitive, with percentages:

LIST NO. 1

21% ragweed	2% tomato
11% timothy	2% asparagus
10% house dust	2% pepper
9% orris	2% sweet potato
8% goose feather	2% celery
8% wheat	2% goat hair
7% cat hair	2% camel hair
7% orchard grass	2% oat
6% strep, hemolytic	2% rabbit hair
6% dog hair	2% strep, viridans
6% horse hair	2% chocolate
6% corn pollen	1% spiny amaranth
6% plaintain	1% red top
5% rose	1% clover
4% duck feather	1% cowslip
4% chicken feather	1% ash pollen
4% sweet vernal grass	1% Russian thistle
4% cocklebur	1% lily of the valley
4% cattle hair	1% goldenrod pollen
3% rye	1% goosefoot
3% milk	1% mugwort
3% Sudan grass	1% goldenglow
3% tobacco	1% daisy
2% rice	1% clematis
2% barley	1% June grass
2% corn	1% pigeon feather
2% Bermuda grass	1% wool
2% alfalfa	1% hog hair
2% oak pollen	1% banana
2% iris pollen	1% onion
2% hickory pollen	1% lamb
2% pigweed	1% cabbage
2% rye grass	1% orange
1% lima bean	1% ostrich feather
1% buckwheat	1% skunk hair
1% paprika	1% squirrel
1% pyrethrum	1% staph.aureus
1% belladonna	1% Lux soap
1% leopard	1% Conquerine

*Read before the Roanoke Academy of Medicine, November 4, 1935.

It is of interest to note that in my series the largest number of reactions was caused by pollens, while the animal substances caused the next largest number and the foods the smallest.

Following is a summary of the reactions in my 1925 series:

LIST NO. 2

45% house dust	5% dog hair
38% goose feather	2.5% ostrich feather
27% chicken feather	2.5% cattle hair
23% orris	2.5% oat
13% bacteria	2.5% tomato
10% wool	2.5% mustard
10% ragweed	2.5% tobacco
10% horse hair	2.5% glue
5% egg	2.5% timothy
5% rabbit hair	

It will be noted from the above lists that the total number of percentages add up to over 100; this, of course, is explained by the fact that some patients are sensitive to a number of substances. In contrast to my present series, in 1925 the largest number of reactions was from house dust, and the pollens were of minor importance.

Of the 100 cases in the present series only five failed to give one or more positive skin reactions. From fair to excellent results were obtained from treatment in all but eleven cases. Included in these eleven cases are the five which gave no reactions and six others which reacted to one or more of the following substances:

ragweed	barley	red oak
house dust	rice	redtop grass
wheat	corn	orchard grass
rye	rabbit hair	timothy

Two forms of treatment must be considered in each case: (1) Removal of the offending substance, and (2) Desensitization. It is very unsatisfactory to stop the use of wheat, for instance, or to remove the ragweed pollen from the atmosphere during the pollinating season; and in such cases desensitization must be undertaken. This is accomplished by the use of very dilute extracts of the offending substance. The two rules which must be followed explicitly are: (1) Give very small doses, avoiding a general reaction; and (2) Give the injections into the skin and not subcutaneously. By observing these two rules, I have the feeling that my percentage of good results has been materially increased. Of the 100 cases no reaction was obtained in five cases. The results in all of these were unsatisfactory. Of the ninety-five cases reacting to one or more substance, four gave poor results, leaving ninety-one reacting to one or more substances who gave fair or good results.

Probably the dust allergic cases and the cases of multiple sensitiveness are still the most difficult to treat.

It is my impression that the two most important features in the diagnosis of the etiological factor are: (1) a careful history, and (2) painstaking skin tests. Often the tests have to be modified to suit the individual case. I recall particularly one lady who had had hay fever for twenty-eight years. She gave a negative reaction to all tests, about 150 in all. Then in going over her history again, I elicited the information that she "had a sluggish liver" and had been taking lapactic pills every night for twenty-eight years. The coincidence of the two statements attracted my attention and it was not difficult after that to discover that the belladonna in the pills was the offending substance. Another time, in testing a man with asthma who was negative to the more common offenders, I found he was strongly positive to guinea pig hair and had forgotten to tell me that he had had a live guinea pig running loose in his house for four years!

Frequently pollens can cause trouble. It has been shown that an acre of wheat produces about fifty pounds of pollen, and that ragweed pollen can be carried on the wind for several miles. Therefore, in a pollen sensitive case, it is not sufficient simply to cause the weeds in the yard to be cut. Either the individual must be moved from the weed-bearing locality, or must be desensitized to the offending pollen.

Desensitization can be accomplished by either the rapid or the slow method, using extracts of the specific offending pollen. In either case, anywhere from ten to twenty injections are necessary. These can be started about two months before the pollinating season and given at the rate of about two a week; or can be started about two weeks before the season starts and given daily. Personally I prefer the latter, as the former often interferes with the vacation plans of the patient. I get best results by injecting the extract intradermally, as recommended by Phillips,[2] rather than subcutaneously. The results of desensitization vary with the individual case. Although in practically no cases is it complete, still in many cases the results are comparable with those obtained by complete avoidance of the "offending substance."

The following are the most common causes of constitutional reactions:

(1) Extreme sensitivity of patient.
(2) Mode of administering the injection.
(3) Concentration of test solution.
(4) Activity of extract used.
(5) Size and frequency of treatment injections.

Offending substances often occur in unexpected places and circumstances. Horse hair occurs in cloth used for covering sofas, cushions and chairs; in crinoline for lining and padding clothes; is used in lining shoes, making gloves, sacks and bags, stuffing auto seats, mattresses and pillows, felt hats and as a binder in plaster.[3]

Cats are more frequent offenders than any other household pets. In general, cat allergy is about twice as frequent as dog. The skins are gradually assuming importance as furs. They are used for lining caps, coats, gloves, slippers, etc. It is a covering for toy animals. Other members of the cat family also supply furs, as leopard, panther, wildcat, jaguar, tiger, lion and lynx.[4]

SUMMARY

Of 100 recent consecutive cases of asthma and hay fever, only five failed to give a positive skin reaction; and these five and six others gave unsatisfactory treatment results, leaving 89 per cent giving results varying from fair to excellent. This compares favorably with my report of 86 per cent in my 1925 series.

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305 Medical Arts Building.

Miscellaneous

The Meeting of the International Society of Surgery at Cairo, Egypt, December 31, 1935, to January 4, 1936.*

The International Society of Surgery was considered at a conference of some of the Continental surgeons in Brussels in 1902. Three years later, in 1905, the first session was held in Brussels. Since that time there has been a meeting every three years, at some important medical center. There are forty-two countries represented in the Society. The Society is limited in membership, and has a total of about 1,250 members. There are 110 members in the United States.

The recent session was held in Cairo, Egypt, on December 31, 1935, and January 1, 2, 3, and 4, 1936. Originally it had been planned for twenty-five or thirty American members, most of them with some member of their families, to attend the meeting but, as conditions about the Mediterranean became more ominous, the prospective attendance dropped off, and finally I was the only member from the United States to attend. Dr. St. Jacques from Montreal was present, and several members from South America attended. Mrs. Horsley accompanied me.

We had originally intended going direct to Naples and from there to Alexandria and Cairo, but as the President of the United States requested American citizens "not to travel on boats of belligerent nations" (and as Haile Selassie had no boats) it meant that we were to forego Italian vessels. We sailed on the *Aquitania,* leaving Richmond on Friday, December 13th. We spent four days in Paris, and from there went to Marseilles and took a French boat to Alexandria; the trip on the Mediterranean consumed four days. The harbor at Alexandria was packed with British war vessels.

At Alexandria we were met by a committee and given a luncheon, and were taken for a sightseeing trip about the city. At the end of the day we went to Cairo, a journey of about three and a half hours by train.

The first meeting was held in the University of Egypt about fourteen miles from Cairo, and was quite formal. There was one of the many student riots during this first session, but no harm was done. It was merely somewhat embarrassing to the authorities of the University and annoying to the attendants upon the meeting. The remainder of the sessions, beginning January 1st, were held in the Medical Department of the University in Cairo, and there was no further disturbance from the students.

Many languages were spoken, the chief languages being French and, from the local men, Arabic. On each day of the meeting there was a symposium on some subject. One day the symposium was on surgery of the sympathetics, with a paper by Leriche and one by Professor Young, of Glasgow. Another day there was a symposium on surgery of the parathyroids. Another session was taken up with a discussion of surgery of the colon except cancer, in which Professor Finsterer, of Vienna, and Professor Grey Turner, of London, read papers. In one session there was a discussion of the surgical features of bilharzia. On the final day the session was turned over to the local profession and there were papers on miscellaneous subjects. Each symposium was open to discussion, and most of the discussions had been arranged some months before the meeting and constituted short papers. I had a brief paper which was a discussion of surgery of the colon.

Bilharzia is quite prevalent in Egypt and is very interesting. The parasite had an unusual life cycle in which an intermediate host is a fresh water snail. The ova are excreted chiefly by the bladder and the lower bowel. The ova cause much irritation and various types of lesions, some of them ulcers, some papillomatous-like growths, and not infrequently cancer results.

There were no surgeons from Italy at the meeting, although several were on the program. Apparently Mussolini would not permit them to attend.

Dr. Rudolph Matas, of New Orleans, was elected president of the International Society of Surgery for

*Dr. Horsley prepared this statement for the MONTHLY by request.

the next term. The next meeting will be held in Vienna in September, 1938.

We returned to France, spending some time on the Riviera and in Spain. Economic conditions in Southern France are very bad. At Nice many of the largest hotels are closed, and there is a lack of tourists, probably from the fear of war and also because of the high rate of exchange of the franc which makes living in France expensive. In Paris the depression is marked, though not so noticeable as in Southern France. The American Hospital in Paris is doing excellent work. Dr. McElroy, who was formerly superintendent of the Memorial Hospital in Richmond, was the superintendent there until his unfortunate death a few months ago. His daughter is on the nursing staff, and one of the graduates of the Medical College of Virginia, Dr. Anderson, is an intern. Another intern is Dr. Warriner, from Atlanta. Both of these men were most courteous and seemed to be very efficient and popular.

Naturally the threat of war creates much tension in all of Europe, particularly in France and in Egypt. However, the prospect did not seem to be quite so alarming in Europe as we were led to believe from the newspaper accounts in America. It seems quite certain that there will be war in Europe within a few years, as soon as economic conditions enable the nations to acquire sufficient armament to destroy each other.

From a medical and a human viewpoint this is extremely depressing. The medical profession spends its time in trying to save lives and relieve suffering. Often the patients, even when cured of their disease, are elderly and feeble. The military viewpoint is quite the opposite. The choicest of the young men of the nation are led forth to be slaughtered or crippled, for reasons that few understand. In France everywhere are statues and monuments to Napoleon, but there is only one small and insignificant statue of Pasteur, who has indirectly saved more lives than Napoleon ever destroyed. Mankind seems to worship its destroyers rather than its saviors.

J. SHELTON HORSLEY, M. D.

Richmond, Va.

Statement Read Before Committee on General Laws of the House of Delegates.

In order to be brief, clear and accurate I have put what I wish to say in writing.

When training schools for nurses were first established each school formulated its own curriculum and established its own standards. As the number of graduate nurses increased, naturally the leaders organized themselves into societies at which questions with reference to the future of the nursing profession were discussed and measures to promote its progress were advocated. The first and most obvious need was a State Board with legal authority to make certain requirements of the training schools and to pass on the qualifications of their graduates. This end was accomplished independently in various states and few of the states followed the same plan. In South Carolina the Board was composed exclusively of physicians. In North Carolina it was composed partly of physicians and partly of nurses. In Virginia it was composed exclusively of nurses.

Eventually the representatives of the various states met and effected a National Organization. Its headquarters are now in New York and it exercises its authority by refusing reciprocity to a nurse who is not registered by a recognized Board in her own state. Thus we have the National League of Nursing Education which lays down the law to the State Boards and State Boards which lay down the law to the individual schools in their territory.

It is important to understand what reciprocity between State Boards means and its bearing on the standards of nursing education in general. As the term indicates it means a mutual exchange of courtesy between State Boards by which nurses who have successfully passed the examinations in one state are registered without re-examination in another state. Reciprocity is only practiced between Boards having the same standards. If the authorities of one state advance their requirements then the authorities of other states will have to advance their requirements or lose reciprocity. Thus it will be seen that a state like New York can influence the standards of nursing education in a state like Virginia.

The present Virginia State Board was created by virtue of an Act by the General Assembly of Virginia approved May 14, 1903, and amended by an Act approved February 17, 1922. In substance the law provides that the Virginia State Board of Examiners of Nurses shall consist of five nurses appointed by the Governor of Virginia from a list of nominations submitted to him by the Virginia State Association of Graduate Nurses. The Board has power to adopt rules and regulations by which to

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establish a standard of instruction and training to be observed by training schools, and the authority to appoint an inspector to visit the schools and see that these requirements are properly complied with. The Board is charged with the duty of conducting examinations at stated periods for graduates of recognized training schools who desire to practice professional nursing in the state. Candidates who pass the examinations are given a certificate and are known as registered nurses. It is unlawful, under penalty of heavy fines, for any person to practice professional nursing of the sick as such for compensation, or to assume the title of trained, registered or graduate nurse without this certificate. The law is qualified, however, by the statement "This Act shall not be construed to affect or apply to the gratuitous nursing of the sick by friends or members of the family; and also it shall not apply to any person nursing the sick for hire, but who does not in any way assume to be a registered or graduate nurse."

Operating under the authority conferred by the legislature the Virginia State Board of Nurses formulated the requirements to be met by the various training schools in the state. These requirements were at first simple and reasonable, but from time to time changes and additions have been made until now the curriculum laid down covers such a variety of subjects and requires so many lectures and laboratory hours that no hospital except one connected with a medical school has qualified teachers to give the courses, and no pupil nurse is able to render any very efficient service to the hospital because so much of her time is occupied by classroom duty.

As a result of this program not only have the schools of all small hospitals in the state been closed but the schools of four hospitals in Richmond and of the hospitals in Alexandria, Fredericksburg, Winchester, Lynchburg, Clifton Forge and Staunton as well. With the exception of schools connected with medical institutions like the Medical College of Virginia and the University of Virginia, most of the schools that continued to function do so with reduced number of students and are apprehensive of the future.

The present situation is the result of a mistaken conception on the part of the State Board of Examiners of the function of a training school for nurses. The individual members of the Board are highly-trained specialists most of whom have been brought to Virginia to fill executive positions. They are not satisfied to train pupils in a way to make them competent to care for the sick but also want to qualify them to fill executive offices, teaching positions and public health work. It is of course necessary to have a certain number of these highly-trained women but it is not fair to educate them at the expense of the nursing profession. They are specialists who should be produced by postgraduate instruction.

I know from experience that before the introduction of the present requirements an average high school graduate who had good health, a willingness to work and a pleasing personal appearance could enter a training school and in three years secure a theoretical and practical training which would make her a safe, efficient and satisfactory nurse. During her stay in the hospital she came into intimate contact with the doctors of the staff and acquired understanding and loyalty. She spent long hours at the bedside of patients and learned to interpret symptoms and methods of relieving them. When she graduated she may not have been qualified to sit at a desk as an executive or to appear on the speaker's platform as a lecturer or to tour the country as an inspector, but she was competent to take charge of a sick patient. She possessed less theoretical knowledge than some of her modern scientific sisters, but she had a more personal and human interest in her work. If I or a member of my family were ill tomorrow I would rather have one of the old type of nurses than one of the new type.

For fifty years the hospital with which I am connected has conducted a training school of which we do not feel ashamed. Certain graduates have risen to high positions in the nursing profession and many others have done and are doing splendid work as individual nurses. Until recently the pupils of the school were able to render a service which justified the hospital in giving them their room and board and a small monthly allowance for personal expenses. With present and prospective requirements of the State Board this will no longer be possible owing to the increased cost of teaching and the increased demands on the pupils time. We are faced with the alternative of closing the school or charging the pupils a tuition fee.

During the last year I have appeared twice before representatives of the Board of Nurses and protested against the policy they have adopted which would prevent a poor but worthy girl entering a training school and would eventually create a shortage of graduate nurses which would entail a hardship on the general public, but I received no promise of relief.

We have, therefore, decided to close the training school as soon as we fulfill the obligation to the pupils already matriculated, and we have taken in no new probationers for the past year.

I think I have always been rightfully regarded as a friend of the nursing profession. I have repeatedly warned the members of the Board of Examiners of the dangers ahead of it—the danger of an attack in the legislature which is being experienced today, and the danger of the state being flooded with practical nurses turned out by the hospitals whose schools have been closed which will come several years hence.

I have the highest respect for the individual members of the Board, several of whom are my personal friends, but I believe they have been animated by an over-zealous enthusiasm which has led to the adoption of a policy which if continued will eventually wreck much of the good work they have done. I know they have been actuated by high motives but they are possessed by an obsession that makes them visionary and impractical.

I am informed that the amendment we are now discussing introduced by Senator Woodson was inspired by Dr. W. T. Graham, President of the State Board of Health. I know Dr. Graham entertains the same views I have expressed with reference to the individual members of the Board, but his position is very different from mine. He has the state's interest to protect and I have only my individual interest to safeguard. Dr. Graham has in his charge three State Tuberculosis Sanatoriums. Each of these institutions has a training school for nurses which is subject to the regulations of the Board. He realized that if its requirements were impartially enforced and were honestly met these three schools would have to close. To do this would entail a great financial loss to the state. He therefore, as a sense of duty, has brought the matter to the attention of the legislature in order that the responsibility would be shifted from his shoulders to those of the law makers of the state. No change is proposed in the present law except in the method of selecting and appointing the members of the Board of Examiners.

Dr. Graham believes, and I concur with him, that a new Board composed of registered nurses and practicing physicians is necessary at this time to protect the interests of the people and of the state.

STUART MCGUIRE, M. D.

March 2, 1936.

Statement Concerning the Action of The Virginia State Board of Examiners of Nurses.

At a called meeting of the Virginia State Board of Nurse Examiners in Charlottesville on February 23rd, the members were informed that according to statements from representatives of Nursing Schools in the State, certain requirements were in some instances difficult to meet, while in others they definitely worked a hardship.

In the light of these findings all requirements were carefully reviewed and the Board adopted the policy in the future to make no new requirements without first consulting with the parties directly affected by contemplated changes. The consensus of opinion was to:

A. Meet an evident emergency and rescind such requirements as will not affect reciprocity to graduates of Virginia Schools in states maintaining good standards.

B. To retain requirements necessary to make graduates eligible for service in the National Red Cross and in the Public Health field.

The decision was reached that without jeopardizing the above, certain requirements could be rescinded, and the Board unanimously declared the following requirements abolished, beginning with Monday, February 24, 1936.

1. OMIT—"The school must provide for experience in Welfare Work," etc. See Page 3, Section 1, Lines 8 and 9. (This requirement is also listed under "experience necessary." See Page 10, Section 10, Lines 7-11, inclusive.)

2. OMIT—"Only one class of students may be admitted during the year." See Page 10, Section 12, Lines 4, 5 and 6.

3. OMIT—"High School credits shall include," etc. See Page 11, Section 14, Lines 1-11, inclusive. This part of section shall read as follows: "Applicants must have graduated from an accredited

four-year Public High School with sixteen units, or from an accredited Private Secondary School with sixteen units.

4. OMIT—"Each student must be an individual subscriber to the *American Journal of Nursing.*" Page 11, Section 17, Lines 1-6, inclusive.

In addition the Board rescinded a requirement affecting Schools connected with Tuberculosis Sanatoria only. The new requirement reads as follows: "Certified Tuberculosis Nurses may qualify for the examination entitling them to become Registered Nurses by securing twelve months training in an accredited School of Nursing approved by the Board and connected with a General Hospital."

ETHEL M. SMITH, R. N.,
Secretary-Treasurer.

Public Health Statistics

I. C. RIGGIN, M. D.
State Health Commissioner of Virginia

The communicable disease reports received at the office of Dr. G. F. McGinnes, State Epidemiologist, for the month of February, 1936, show the following cases compared with the same month in 1935:

	1936	*1935*
Typhoid and Paratyphoid Fever	19	38
Diphtheria	72	75
Scarlet Fever	218	231
Measles	350	3,827
Meningitis	104	23
Poliomyelitis	1	3
Rocky Mountain Spotted Fever	0	0
Typhus Fever	0	0
Undulant Fever	1	1
Tularaemia	0	3
Smallpox	0	1

THE SUMMER ROUND-UP PROGRAM

The Summer Round-Up is a program carried on for the purpose of having every child who is to enter school for the first time examined by his family physician, and defects corrected, if possible. This beginners' program has been conducted in Virginia since 1927, and is sponsored by the National Congress of Parents and Teachers, the American Medical Association, the National Education Association, the Pediatric Society, and the Medical Society of Virginia.

It has been shown that children who enter school physically fit are not handicapped in their school work as are those who enter physically unfit, and that defects uncorrected in childhood may cause ill health in later life. Therefore in 1930 officials of the Medical Society of Virginia, the Pediatric Society, the State Board of Education, the State Department of Health, a rural physician, a rural mother, and a rural teacher held a conference in Richmond and decided that the most practical way to handle the children who were doing poor work in school was to continue and expand the Summer Round-Up program.

The procedure decided upon by this group is as follows: (1) A representative of the Parent-Teacher Association, or school league, consults the principal of the school regarding this program; (2) Survey forms are sent out in ample time to be returned before the close of the session. These forms ask for the following information: Name and age of the beginner, names and addresses of the parents, and the name of the family physician; (3) Upon completion of the survey, the forms are classified according to family physicians, and the committee members visit the physicians to arrange for the examination of the children; (4) The examinations are scheduled early in the summer in order to allow ample time for correction of defects before the session opens; (5) It is expected that a fee will be charged for these examinations; (6) The Chairman of the Health Committee sends to the parents a letter giving important reasons for having the children examined before entering school, especially as to the Five Points—vision, hearing, throat, teeth, and weight. When the doctor examines the child for these and other points, he may also give the required vaccination against smallpox, and begin treatments for protecting against diphtheria, if this has not already been done.

Some advantages of the Summer Round-Up are:

1. Health supervision by the family physician.

2. Even where there is a school physician, it saves his time. There is no city or community in Virginia that has a sufficient number of school physicians to make a complete examination of every child who needs one. Under this plan the family physician can examine those children whose parents are able to pay, and this will allow more time to the school physician to examine those who cannot pay. Thus all children have a better examination.

3. Saves a home visit by public health nurse.

4. A large percentage of corrections are eventually done.

5. Saves the taxpayer money. The more children who enter school physically fit, the fewer failures will result, and the more the cost of education will be lessened.

6. Such an examination is of educational value to the parents and to the lay workers; for when a careful examination is made of a beginner it tends to make these workers and the parents realize that such an examination will be good for themselves and other members of their families. The result of the examination is much more satisfactory when the parent is present.

The following is the number of examinations made during 1935 by counties and cities:

COUNTIES	
Amelia	10
Amherst	42
Appomattox	10
Arlington	105
Augusta	749
Botetourt	44
Brunswick	102
Charles City	14
Charlotte	72
Cumberland	7
Dinwiddie	33
Essex	8
Fairfax	29
Fluvanna	80
Giles	415
Greenesville	70
Halifax	54
Isle of Wight	64
King George	4
King and Queen	26
King William	23
Loudoun	48
Louisa	7
Nansemond	348
New Kent	9
Norfolk	19
Northampton	58
Northumberland	61
Nottoway	17
Orange	74
Pittsylvania	96
Prince Edward	116
Prince George	154
Princess Anne	20
Prince William	132
Pulaski	30
Roanoke	150
Rockbridge-Lexington	315
Smyth	24
COUNTIES—Continued	
Stafford	91
Surry	15
Sussex	61
Tazewell	27
Wythe	185
TOTAL COUNTIES	4,018
CITIES	
Alexandria	108
Buena Vista	27
Lynchburg	236
Norfolk	400
Portsmouth	81
Richmond	903
Winchester	156
TOTAL CITIES	1,911
GRAND TOTAL	5,929

Woman's Auxiliary to the Medical Society of Va.

President—MRS. FLETCHER J. WRIGHT, 49 S. Market St., Petersburg.

President-Elect—MRS. F. D. WILSON, 5352 Studley Ave., Norfolk.

Corresponding Secretary—MRS. MEADE EDMUNDS, Walnut Hill, Petersburg.

Recording Secretary—MRS. HAROLD W. POTTER, 70 33rd St., Newport News.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Ave., Richmond.

Chairman, Press and Publicity—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.

Board Meeting.

The Mid-Winter Board Meeting of the Auxiliary to the Medical Society of Virginia met on February 19th at 11:00 A. M., at the First Baptist Church, Petersburg, Va., with Mrs. Fletcher J. Wright, the president, presiding. Sixteen members were present. The Board felt a great sense of gratification in the fact that two Virginia physicians attended this session—Dr. Fletcher J. Wright, of Petersburg, and Dr. Hawes Campbell, of Ventor. The purpose of the meeting was to review the work which has been accomplished since October, and to discuss and thresh out the difficulties which each county auxiliary has encountered. Reports given by the Standing Committee Chairmen and County Presidents gave splendid indication that each auxiliary is ap-

plying itself diligently to its work, and is well on the way toward attaining the goal set for this year.

The president recommended that each county auxiliary select one day of the week of April 12th to 18th, to be set aside as "DOCTOR'S DAY," to honor famous doctors living and dead, in recognition of what the medical profession has done for humanity. The program for the observance of this day was left to the discretion of each auxiliary, but Mrs. Wright offered the helpful suggestion that there be meetings or entertainments with speakers, etc. She recommended the reading of Robert Louis Stevenson's "Eulogy of the Doctor" for this day.

At the conclusion of the business session, Mrs. Wright was hostess to the members of the Board at a delightful luncheon at her home on South Market Street.

Kansas City Meeting.

The Auxiliary to the American Medical Association will hold its Annual Meeting in Kansas City, Mo., May 11th-15th, with headquarters at the Hotel Baltimore. The Convention City is quite a distance from Virginia but it is hoped that many Auxiliary members are planning to accompany their husbands to this Annual Medical Meeting, and will attend the many interesting sessions of the National Auxiliary.

The Auxiliary to the Norfolk County Medical Society

Held its February meeting in the Library of the Medical Arts Building, with the president, Mrs. C. C. Smith, presiding. Letters of thanks and appreciation were read from Dr. James W. Hunter, President Norfolk County Medical Society, and Dr. Charles W. Doughtie, Chairman of Library Special Committee, for the gift of $50.00 from the Woman's Auxiliary. The recommendation of donating the sum of $10.00 toward The State Auxiliary Sinking Fund was approved. Mrs. Kimbrough, Chairman of Public Relations, reported that the Auxiliary was sponsoring debates in the two Junior High Schools in the city on the necessity of physical examinations for Junior High pupils. There was an appeal for magazines and games for children at the WPA Service Centers, and members of the Auxiliary responded by sending the articles requested. Several members of the Auxiliary volunteered their services on Friday afternoons to read stories to the children at the Day Nursery. Mrs. Crosby told of the need for two layettes for worthy families. One was arranged for through a Church Circle, and the other was made up from contributions of individual members of the Auxiliary. At the conclusion of business, Mrs. Alfred Anderson gave an interesting talk on the Cause and Cure of War Conference recently held in Washington, D. C.

CAROL F. SIMPSON,
Reporter.

The Auxiliary to the Petersburg Unit of the Medical Society of Virginia

Met on February 25th with Mrs. E. L. McGill presiding. Mrs. W. B. McIlwaine was requested to send $10.00 to the Auxiliary Sinking Fund. The linen shower for the hospital was discussed and members were urged to see their circle leaders in the various churches in order to bring this worthy cause to the attention of the churches. A tea for the nurses will be given on March 17th, and Mrs. Meade Edmunds very graciously offered her home for the occasion. A social supper for the doctors and members of the Auxiliary was discussed. Mrs. Meade Edmunds, Mrs. Allen Barker, and Mrs. H. C. Jones were appointed on the entertainment committee. Following the business session, Mrs. W. B. McIlwaine read an interesting account of the operation upon Jane Todd Crawford.

EMILY BARKER, *Reporter.*

Auxiliary to the Richmond Academy of Medicine.

This Auxiliary held its monthly meeting in the Library of the Academy of Medicine on March 13th. The annual card party which is given by the Auxiliary each Spring was discussed, but no date was set for the party at this meeting. The Auxiliary has decided to go in jointly with three other organizations who are sponsoring a Cooking School which will be held during several days in May. Mrs. A. G. Shetter, the president, brought up the question of how this Auxiliary could best observe Doctor's Day and, after discussion, it was decided to leave this to the discretion of the Program Committee, which is headed by Mrs. T. B. Washington as Chairman. The speaker at this meeting was Dr. Ambrose McGee, who gave a most interesting and enlightening talk on "Allergy in Children."

Dr. Southgate Leigh.

In the recent sudden death of Dr. Leigh the Virginia Auxiliary has lost its founder and its friend.

In 1922, shortly after the American Medical Auxiliary was founded, Dr. Leigh became interested in the organization and had the foresight to see the many opportunities for service and the avenues which lay open to the wives of men in the medical field. He inspired in the hearts and minds of a group of women the desire to be of service not only to their husbands but to the community and, through his efforts, Virginia was the second State to organize. His was a fatherly attitude, and the confidence which he inspired enabled the first members of the Virginia Auxiliary to combat the disillusion and obstacles which confront all who start upon a new venture. He planted the seed and nurtured and cared for the growing plant and, before the time of his death, was able to see the fruition of his labor. Dr. Leigh was an ever-patient listener to the many problems of the Auxiliary. He was never too busy nor taken up with the many duties which pressed upon him to lend an understanding ear, and give the benefit of his opinion and good judgment. He served on the Advisory Council appointed by the State Society from the time of its inception in 1930 until the time of his death. He attended and spoke at nearly every Annual Meeting of the Auxiliary and, in the instances when he could not be present, wrote a helpful and encouraging message to be read before the assembly. At the recent Board Meeting held in Petersburg a letter was read from Dr. Leigh, which he had written on the train, expressing his regret at his inability to be present, and setting forth his hopes and ambitions for the Auxiliary.

The Medical Society of Virginia has lost one of the foremost figures in its organization. The Auxiliary has lost its Father and friendly adviser. But Dr. Leigh cannot die for his name is perpetuated in the work of the Virginia Auxiliary, and "to live in hearts we leave behind is not to die." To those who mourn and miss him the words of James Whitcomb Riley bring comfort and consolation:

"I cannot say, and I will not say
That he is dead. He is just away!
With a cheery smile and a wave of the hand
He has wandered into an unknown land
And left us dreaming how very fair
It needs must be since he lingers there.
And you—oh you, who the wildest yearn
For the old time step and the glad return,
Think of him faring on, as dear
In the love of There and the love of here
Think of him still as the same I say
He is not dead. He is just away." J. W. S.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Mead Johnson & Co.

Mead's Oleum Percomorphum 50 per cent (Percomorph Liver Oil 50 per cent in Cod Liver Oil)

Mead's Oleum Percomorphum 50 per cent (Percomorph Liver Oil 50 per cent in Cod Liver Oil) in 10-drop (.222 Gm.) Capsules

Mead's Cod Liver Oil Fortified with Percomorph Liver Oil

The Valentine Company

Solution Liver Extract—Valentine

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Iodobismitol with Saligenin.—A solution of sodium iodobismuthite (sodium bismuth iodide) and sodium iodide in propylene glycol (racemic 1,2 propylene glycol) containing saligenin and a small amount of acetic acid. Iodobismitol with Saligenin seems to be well absorbed and to be excreted fairly rapidly. The claim that the bismuth will penetrate the brain in significant quantity in a great majority of persons treated needs further confirmation, and therapeutic indications based on it must be considered unwise. The product is supplied in 2 c.c. ampules. E. R. Squibb & Sons, New York.

Normal Horse Serum (See New and Nonofficial Remedies, 1935, p. 365).—Also marketed in packages of one 10 c.c. vial, and in packages of one 100 c.c. double-ended vial, complete with intravenous outfit and sensitivity test dilution. The National Drug Co., Philadelphia. (*J. A. M. A.*, February 22, 1936, p. 617.)

Propaganda for Reform

Nonspecific Protein Treatment.—In *The Journal A. M. A.*, November 30, 1935, p. 1765, appears the first of two special articles on nonspecific protein treatment, prepared under the auspices of the Council on Pharmacy and Chemistry. In this article Dr. Hektoen discuses briefly the nature of the reactions to nonspecific proteins in the treatment of infectious diseases. In *The Journal A. M. A.* for December 7th, Dr. Cecil will review experiences and results with this treatment; he shows that modern protein treatment appears to have achieved "a permanent place for itself in modern therapeutics," not only of certain acute and subacute infectious diseases but also in other conditions, notably thrombo-angiitis obliterans. Both articles point out that the effects of nonspecific proteins in infectious conditions are associated with nonspecific as well as specific antiinfectious processes. It is evident that much more study of the changes induced by nonspecific proteins in the human body is required in order to obtain more of an insight into the nature and significance of these proc-

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esses as they occur under various conditions. From Cecil's review it appears further that the indications, contraindications and limitations of non-specific protein treatment in its present forms are well under way toward fairly definite establishment. Certainly the indiscriminate and offhand use of the treatment is unwarranted and not free from danger. (*J. A. M. A.*, November 30, 1935, p. 1776).

Book Announcements

The National Formulary. Sixth Edition. Prepared by the Committee on National Formulary. By Authority of the American Pharmaceutical Association. Official from June 1, 1936. Published by the American Pharmaceutical Association. Washington, D. C. 1935. Octavo of viii-556 pages. Cloth. Price, $5.00.

The purpose of N. F. VI is to supply formulas and standards for preparations and standards for drugs and chemicals which are in general use in medical practice within the United States, for which formulas and standards are not provided in U. S. P. XI. Whereas the requirement for admission to the U. S. P. is primarily therapeutic merit, that for admission to the N. F. is based upon extent of use.

In order to determine the extent of use of non-secret drugs and preparations in the U. S., the N. F. Revision Committee conducted and made use of several extensive and expensive investigations. These investigations led to the decision that a non-secret drug or preparation was admissible to N. F. VI which (1) was used or sold in 20 per cent of the drug stores of the U. S. or (2) occurred one or more times in each 10,000 U. S. prescriptions, i. e,, it had an annual prescription usage of at least 25,000 times.

When the products of N. F. V. were judged upon this basis it was found that 246 preparations and seventy-five drugs and chemicals did not meet these requirements. These 321 products were then denied admission to N. F. VI. It was found furthermore that 148 new products and eighty-four which had been deleted from U. S. P. X did meet these requirements, hence these 232 have been added. Although the total number of monographs has been reduced from 779 in N. F. V. to 689 in N. F. VI, the total prescription occurrences have been increased from 1,653 times to 3,706 times in each 10,000 prescriptions.

Among the N. F. V. items not admitted to N. F. VI we find fifty-eight crude drugs, twenty-one elixirs, twenty-one syrups, forty-four fluid extracts, eighteen tinctures and fourteen pills. New admissions include twenty-one ampuls; forty-five tablets; twenty-six crude drugs; seven elixirs, among which are those of barbital and phenobarbital; eight syrups, four of which were in U. S. P. X; eleven fluid extracts; nine tinctures, eight of which were in U. S. P. X; three pills, two of which were in U. S. P. X, and six animal drugs. Fundamental research in the histological characters of desiccated substances prepared from ovary, pituitary and suprarenal has made it possible for N. F. VI to include descriptions which enable the microscopist to determine the identity and purity of these powders.

The alphabetical arrangement of N. F. VI monographs is continuous, whereas in N. F. V it was interrupted by having the book divided into two parts. A chapter is included on diagnostic reagents and clinical test solutions. In preparing N. F. VI the Revision Committee had the help of associate committees from The American Pediatric Society, The American Dental Association, The American Veterinary Medical Association, the American Drug Manufacturers Association, and officials of the Federal Food and Drug Administration.

W. G. CROCKETT, M. S., PHAR. D.*

*Professor of Pharmacy, School of Pharmacy, The Medical College of Virginia. Auxiliary member of the

Books Available to Doctors.

Some books recently added to the Library of the Medical College of Virginia available to members of the Medical Society of Virginia are:

Thoms, H. Classical contributions to obstetrics and gynecology.

Thoms, H. The obstetric pelvis.

Thomson, J. A. Biology for everyman.

Thorington, J. Refraction of the human eye.

U. S. Army X-Ray manual. 2nd ed.

Whitby and Britton. Diseases of the blood.

Winton and Winton. The structure and composition of foods.

Wodehouse, R. P. Pollen grains.

Wolf, A. A history of science, technology, and philosophy in the 16th and 17th centuries.

Yerkes and Learned. Chimpanzee intelligence and its vocal expressions.

Young and Russell. An investigation into the statistics of cancer in different trades and professions. (Med. Res. Council Spec. Rep. Ser. No. 99.)

Zabriskie, L. Mother and baby care in pictures.

Zilboorg, G. The medical man and the witch during the Renaissance.

Zondek, H. Diseases of the endocrine glands.

Revision Committee, N. F. VI.

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Editorial

Is the Question of Nursing Education Settled?

Elsewhere in this issue of the VIRGINIA MEDICAL MONTHLY a statement by Dr. Stuart McGuire before a committee of the Virginia House of Delegates and a communication from Miss Ethel M. Smith, Secretary-Treasurer of the Virginia State Board of Examiners for Nurses, are published. The first is a plea before the law makers of Virginia for the addition of doctors to the State Board of Examiners for Nurses that the experience and judgment of the medical profession might be available in shaping the future course of nursing education in this State. The second outlines certain concessions which the State Board of Examiners for Nurses decided to make in order to halt the drive of the medical profession in the direction outlined in Dr. McGuire's statement. The conciliatory attitude of the Board was followed by a cessation of activity on the part of the medical profession, and a bill providing for several doctors on the Board of Examiners for Nurses, which had been introduced into the Senate and passed by a large majority, was allowed to die in the House.

For the time being the medical profession of Virginia seems to have accomplished its purpose. Without affecting reciprocity for its nurses or their eligibility for service in the National Red Cross or Public Health fields, the State Board of Examiners for Nurses has rescinded many objectionable features of its former requirements. In particular we are informed that there will be no more necessity for a nurse to be given experience in welfare work by her training school, that more than one class of nurses may be matriculated by a school in a single year, that sixteen units will be all the preliminary education required, that it will be no longer necessary for each student nurse to subscribe to a nursing magazine, and that discriminatory regulations involving graduates of Virginia tuberculous sanitaria will cease.

Upon the surface this may appear to be a satisfactory solution of a vexed situation of several years standing but, after all, the agreement is rather that of an armistice, and the peace terms remain yet to be written. The reason for this assertion is that in the first place no definite provision has been made for the future reflection of doctors' convictions in policies of nursing education save in the rather vague promise—a sort of gentlemen's agreement, it is supposed—that no changes will in future be made involving training schools without first consulting them. It is the belief of this journal that no one is more acutely concerned with these policies of nursing education than the physician, and that no one has earned a better right to a legal voice in their determination than he. In the second place no provision has been made for carrying out the spirit of

the contention of those in the nursing profession who have fought for higher nursing standards. The medical profession is not against this spirit. It admires and applauds those leaders who envision greater educational opportunities for nurses in this State. The medical profession contends, however, that these opportunities should be made available only to those who are capable of accepting them, to those who desire postgraduate training to fit them for special types of work. It believes that the principle of requiring all nurses to adhere to such standards would be a fatal blow to the nursing profession as a whole by making it less useful to the very people it is organized to serve. Provision must be made in the State of Virginia for the higher education of selected nurses. But this need not affect the curricula for the average training school for nurses except in minor details.

The nursing profession, like the medical profession, came into being and exists not for its own good but for the good of the public. Any change that exalts the profession to the detriment of the public is false and will not stand the test of time. The question has nothing to do with feminism or self-determination, though some have tried to read these issues into discussions on the question. It is a question of good to humanity. The nursing profession, as the medical profession, willy nilly must adopt in spirit and in actuality the motto of the Prince of Wales, *"Ich Dien."*

What's in a Drop?

For many years physicians have been prescribing drop doses of medicines without knowing precisely what their patients were getting. The minim is defined as the sixtieth part of a fluid dram and is an exact measurement. The drop, although often used synonymously, is, as every physician of experience knows, rarely the same. Drops vary with the specific gravity and viscosity of the fluid used, as well as with the size and shape of the dropper from which they are ejected. It is well known that a fluid dram of the tincture of digitalis may contain anywhere from 100 to 300 drops depending upon the type of dropper employed. A dram of water and a dram of alcohol are very different quantities when expressed in terms of drops. A fluid dram of alcohol delivered by a standard dropper will be found to contain about 150 drops. The same quantity of water delivered by the same dropper yields only about 75 drops. It is pleasing to note that in the last edition of the *United States Pharmacopoeia* a standardized medicine dropper is at last defined. In spite of the fact that pills and tablets have largely displaced the fluid administration of medicine there is still a useful role to be played by the medicine dropper in the daily therapeutics of the average doctor.

Proceedings of Societies

The Fauquier County Medical Society

Met at the residence of Dr. J. Elwood Knight, in Warrenton, on March 12th, with the president, Dr. Richard Mason, presiding.

The Society had invited Miss Esta L. Will, County Red Cross Nurse, to attend this meeting and speak on diphtheria immunization and the desirability of holding a clinic for this purpose. She presented the State's plan, emphasized educating parents on the necessity of protection, and gave a number of really worth while facts. The following doctors discussed this subject, bringing out many valuable points: Drs. Allen, Knight, Mason, Trow, Townsend, Folk, McCullers, Grant. Everyone present voted to give Miss Will our full cooperation and to do everything possible to protect our county against this dreaded disease. To decide on charges and other details a committee composed of Drs. Knight, Mason, McCullers and Townsend, was formed to meet with Miss Will.

Dr. William Ribble Pretlow, of The Plains, was elected to membership and was recommended for the practice of medicine in the Fauquier Hospital.

Dr. Henry L. Townsend was endorsed by all present for the position of delegate to the National Democratic Convention.

Dr. Martin B. Hiden was elected a member of the Executive Committee of the Board of Directors of the Fauquier County Hospital. Some time ago the Hospital Board changed its by-laws so as to in-

clude a physicion on this Committee, the position to be filled by a vote of the Fauquier County Medical Society.

A general round table discussion then followed. Premature senility, the limiting of undesirable offspring, and a number of other medical subjects were discussed and many interesting cases were reported.

The Society then adjourned to enjoy an excellent supper and to continue the discussions informally.

M. B. HIDEN,
Secretary.

Albemarle County Medical Society.

At the January meeting of the Albemarle County Medical Society, the following officers were elected for the ensuing year: President, Dr. W. H. Paine, Charlottesville; vice-president, Dr. E. C. Drash, University; and secretary-treasurer, Dr. Arthur M. Smith, Charlottesville.

James City-New Kent County Medical Society.

At a recent meeting of this Society, the following officers were elected: President, Dr. B. I. Bell, Williamsburg; vice-president, Dr. E. B. Kilby, Toano; and secretary-treasurer, Dr. F. R. Person, Williamsburg.

Dr. Person, the new secretary, is a graduate of the University of Virginia, class of '33, and recently returned to his former home in Williamsburg for the practice of his profession.

The Roanoke Academy of Medicine

Held its regular meeting on March 2nd, at 8. P. M. After hearing the reports of several committees the following program was presented:

1. Presentation of cases illustrating the use of radium in carcinoma, by Dr. W. Banks Huff.

2. Nephrotomy for complete removal of Stag Horn Stones, by Dr. Warren Koontz, of Lynchburg. He reported three cases in which the pelvis of the kidney was filled by stones that were successfully removed. Dr. Koontz, a native of Roanoke, was for several years an associate in urology at the University of Virginia.

3. Results obtained with Fever Therapy in late Syphilis, by Dr. James King, St. Albans Sanatorium, Radford.

4. Pain Syndromes in the Urinary Tract: Their Mechanisms and Clinical Management, by Dr. L. D. Keyser. Discussion of Dr. Keyser's paper was opened by Dr. W. W. S. Butler, Jr.

On Monday, March 16th, at 8:30 P. M., the Roanoke Academy of Medicine met as the guest of the Veterans Facility near Roanoke. The following program was presented by members of the staff of the facility:

1. Physiotherapy as Applied to Mental Cases, by Dr. H. B. West.

2. Occupational Therapy as Applied to Mental Cases, by Dr. P. M. Jerrell.

3. Treatment of Neuro-Syphilis in This Hospital, by Dr. D. P. Stearns.

4. Types of Dementia Praecox, demonstrating a case of each type, by Dr. L. C. Smith.

5. Encephalitis Lethargica, Perkinsonian Syndrome, with case demonstration, by Dr. F. F. Oast.

6. Prevalence of Diabetes in Mental Cases, with case demonstration, by Dr. C. E. Clay.

At the conclusion of the program refreshments were served in the recreation hall of the institution. The meeting was a very interesting one.

BLANTON P. SEWARD,
Secretary.

Warwick County Medical Society.

Dr. Waverly R. Payne was elected president of this Society for the current year and Dr. Harvey G. Bland was elected secretary. Both officers are of Newport News, Va.

Richmond Academy of Medicine.

At the regular meeting of the Academy on March 10, with Dr. Roshier W. Miller presiding, Dr. Charles Hendee Smith, of New York City, was the guest speaker, his subject being "Pneumonia in Children." Dr. Smith is one of the outstanding pediatricians of this country and is professor of Pediatrics at the New York University and Bellevue Hospital Medical School. He is a past president of the American Pediatric Society.

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News Notes

Staunton, Our Convention City.

At our 1935 meeting, a most cordial invitation was extended by the Staunton and Augusta County doctors to the Medical Society of Virginia to have its sixty-seventh annual meeting in Staunton. Since then, the Mayor on behalf of the City Council as well as the Staunton and Augusta Chamber of Commerce have expressed their pleasure at having the Society accept this invitation and offered to help in every way possible for the success of our meeting. We can safely say, therefore, that a cordial welcome awaits each and all. Last month we announced that the Council had selected October 13th, 14th and 15th as the dates for this meeting. The Local Committee will feel repaid for their efforts in our behalf if we have a large attendance, so let every member possible arrange to be on hand.

There will be ample accommodations and the following rates have been stated by the hotels:

STONEWALL JACKSON HOTEL

Single room without bath	$2.00
Double room without bath	3.50
Single room with bath	2.50 and up
Double room with bath	4.00 and up
Double room with twin beds and bath	5.00 and up

STONEWALL JACKSON TAVERN

Single rates	$3.00 and up
Double rates	5.00 and up

BEVERLEY HOTEL

Single room, without bath, double bed	$1.50
2 persons	2.50
Single room, with bath or shower, 1 person	2.00
2 persons	3.00 and up

WOODROW WILSON HOTEL

Room without bath	$1.50 per person
Room with bath	2.00 per person

As a matter of convenience, reservations should be made as promptly as possible.

McGuire Lectures and Spring Clinics Open to Profession.

The McGuire lectures will be given by Dr. Edward C. Rosenow, Head of the Division of Experimental Bacteriology, Mayo Foundation, and Professor of Experimental Bacteriology of the Mayo Foundation of the University of Minnesota, and the clinics of the Medical College of Virginia, by the college faculty, on April 6th and 7th.

PROGRAM

MONDAY APRIL 6, 1936

8:30 P. M. Focal Infection and Elective Localization.—*Dr. Edward C. Rosenow, University of Minnesota, Rochester, Minn.*

TUESDAY APRIL 7, 1936

10:00-10:30 A. M. The Importance of Alveolar Infection in Focal Infections.—*Dr. Harry Bear, Dean of the School of Dentistry.*

10:30-11:00 A. M. The Importance of Tonsils and Nasal Accessory Sinuses in Focal Infection.—*Dr. Karl S. Blackwell, Professor of Otolaryngology.*

11:00-11:30 A. M. Focal Infection and Eye Disease.—*Dr. Emory Hill, Professor of Ophthalmology.*

11:30-12:00 M. Focal Infection and Chronic Arthritis.—*Dr. Donald M. Faulkner, Associate in Orthopedic Surgery.*

12:00-12:30 P. M. Focal Infection and Infections of the Genito-Urinary Tract.—*Dr. A. I. Dodson, Professor of Genito-Urinary Surgery.*

12:30-2:00 P. M. Luncheon, Cabinass Hall, as guests of college.

2:00-2.30 P. M. Focal Infection and Diseases of the Nervous System.—*Dr. L. S. Meriwether, Neuro-Pathologist.*

2:30-3:00 P. M. Focal Infection and Cardiovascular Disease.—*Dr. Wm. B. Porter, Professor of Medicine.*

3:00-3:30 P. M. Round Table Discussion of Symposium.—Discussion led by *Dr. Wm. B. Porter, Professor of Medicine.*

8:30 P. M. Streptococci in Relation to Diseases of the Nervous System.—*Dr. Edward C. Rosenow, University of Minnesota, Rochester, Minn.*

These lectures are open to members of the medical profession and there is no fee.

Annual Clinic of Norfolk County Medical Society.

The Norfolk County Medical Society will hold its Annual Clinic in Norfolk on Monday, April 30, 1936, to which all physicians are most cordially invited. There are no fees or charges to be paid.

PROGRAM

NORFOLK PROTESTANT HOSPITAL, BEGINNING PROMPTLY AT 10 A. M.

Retrobulbar Abscess—Reports of Cases—Dr. James E. Diehl.

Eye Clinic—Dr. A. A. Burke.
Blood Changes in Nephritis—Dr. H. McGuire Doles.
Intravenous Urography—Dr. K. K. Wallace.
Neurological Clinic—Drs. Frank H. Redwood and R. F. Slaughter.
Medical Clinic—Dr. A. Brownley Hodges.
Foreign Bodies in the Esophagus—Dr. C. C. Cooley.
Chest Surgery—Dr. C. Carroll Smith.

ST. VINCENT'S HOSPITAL, BEGINNING PROMPTLY AT 2 P. M.

The Fourth Lead in the Electrocardiogram—Dr. James W. Hunter.
Surgical Clinic—Drs. R. L. Payne and R. Duval Jones.
Medical Clinic—Drs. Walter B. Martin and M. S. Fitchett.
Surgical Clinic—Dr. Julian L. Rawls.
Skin Clinic—Drs. Raymond Kimbrough and Jas. W. Anderson.

Large Attendance Expected at Postgraduate Institute.

Provision has been made for an expected attendance of at least 1,000 at the Philadelphia County Medical Society's Postgraduate Institute, to be held in the Bellevue-Stratford Hotel, Philadelphia, April 20th to 24th, inclusive. Response to the preliminary announcements has exceeded the committee's fondest hopes, as letters of inquiry have been received from physicians in twenty-five states, as far west as Missouri, as far south as Alabama and as far north and east as the New England states. In view of the widespread interest in this initial effort by the county society of an outstanding medical center to provide advanced instruction for practicing physicians, it is virtually certain that the Institute will become an annual event.

This year's program, dealing entirely with cardiovascular and renal diseases and their far flung ramifications, is being presented by fifty-three leading members of the faculties of the University of Pennsylvania School of Medicine and Graduate School of Medicine, Jefferson Medical College, Temple University School of Medicine, and the Woman's Medical College of Pennsylvania.

Registration, open to all physicians who are members of their local county medical societies, will begin at 10 A. M., Monday, April 20th. The only charge is $5.00 to help defray the expenses of the Institute. Following a luncheon in the hotel, the scientific program will get under way at 2 P. M. Morning and afternoon sessions will be held on Tuesday, Wednesday, Thursday and Friday. Since there is no division of the program into sections, but one paper will be read at a time, and all attending will be able to listen to the entire program.

In addition to the program there will be an interesting arrangement of technical exhibits in adjoining rooms, covering a wide range of articles used by the physicians or their patients.

Report of the Division on Public Health and Medical Care of the Virginia Conference of Social Work.

In accordance with recommendations growing out of the meetings of the Division on Public Health and Medical Care of the 1935 Virginia Conference of Social Work, the Medical Society of Virginia sponsored the program of this Division at the annual meeting of the Conference held in Roanoke, March 19th through 21st. Dr. W. P. Jackson, of Roanoke, served as chairman of this section, and prominent speakers appeared on the program. Many excellent papers were read, some of which will appear in later issues of the MONTHLY. The program of the Health Division was concerned with three major medical and public health problems: (1) Social, medical and public health aspects of the venereal diseases; (2) Medical care of the indigent sick and low income groups; and (3) Health education and methods of appraising community health needs and facilities.

At the conclusion of the Conference, the Findings Committee, composed of Dr. W. P. Jackson, Dr. C. B. Ransone, Dr. T. J. Hughes, Dr. C. L. Outland, Dr. B. B. Bagby, and Dr. R. W. Garnett, presented the following report and recommendations from the Health Division to the Executive Committee of the Conference:

1. The Division of Public Health and Medical Care of the Virginia Conference of Social Work continues to endorse the recommendations of the Public Health Section of the 1935 Conference and recommends the continuation of efforts to carry out this report.

2. We also endorse the program and efforts of the State Health Commissioner to extend rural health work in Virginia.

3. We endorse the program of the Child Conservation Committee of Virginia and urge that every effort be made to promote its efforts toward the expansion of State and local programs for tuberculosis control, venereal disease control, sight-saving, im-

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munization, tonsil and adenoid clinics, and other services for the indigent sick.

4. We recommend that a continuing committee of the Medical Society of Virginia lend its efforts throughout the year toward the carrying out of these recommendations and we further recommend that this committee cooperate and coordinate its efforts wherever possible with those of the Child Conservation Committee and other committees working for improvement of State health problems.

5. We further recommend that this committee, in cooperation with other groups in the State, develop a program for the interpretation to and education of the community at large concerning health needs in the State, with the objective of creating public support for the development of adequate health programs throughout the State.

Dr. Brown Honored.

Dr. George W. Brown, Williamsburg, Va., recently celebrated his twenty-fifth anniversary as superintendent of the Eastern State Hospital. He was guest of honor at an informal reception given by the staff of the hospital at which time he was presented with a silver pitcher and goblets.

The Eastern State Hospital is the oldest institution of its kind in America. Since Dr. Brown became superintendent, it has been increased in size and the number of patients nearly doubled. Seven new units have been added and three others are now under construction. Only two medical assistants were at the hospital when Dr. Brown took it over, and all nursing was done by matrons. Today a staff of four medical assistants, eight graduate nurses, a pharmacist, dentist, technician, social worker and a medical secretary, and a staff of 100 attendants carry on the work.

Interns of the Hospital Division, Medical College of Virginia,

Had an interesting gathering in Richmond on March 20th, which was featured by clinics, case demonstrations and a banquet that evening. Dr. A. C. Broders, head of the department of surgical pathology at the College, was elected president for the coming year; Dr. J. S. Weitzel, Richmond, vice-president; and Dr. Nathan Bloom, of the resident staff of the Memorial Hospital, secretary. More than a hundred former internes attended this meeting and it was decided to make it an annual affair, with meetings in March or April of each year.

Dr. Garcin Honored by Masons.

Dr. Ramon D. Garcin, Richmond, Va., for more than forty years an active member of various Masonic lodges in this vicinity, on March 3rd was honored by Richmond Lodge, No. 10, A. F. & A. M., when he was presented with a diploma of honorary membership in the lodge. This was done in recognition of his services as physician to the Masonic Home over a period of many years, without charge. This lodge has conferred very few honorary membership diplomas. One of the first to receive this was General LaFayette, on the occasion of his visit to Richmond in 1824. The diploma given Dr. Garcin is similar in design to that presented General LaFayette.

Surgeon General of U. S. Public Health Service.

Dr. Thomas Parran, Jr., recently Commissioner of the New York State Department of Health, has been nominated by President Roosevelt as Surgeon General of the U. S. Public Health Service to succeed Dr. Hugh S. Cumming, who recently resigned after a long service.

Tuberculosis Campaign.

"Robber of the Prime of Life" and "On Your Guard," titles of two new pamphlets being distributed by the Virginia Tuberculosis Association, give the keynote of the spring educational campaign being conducted by that organization and its local branches.

Talks are being made before clubs and groups of various kinds, and every effort is being made to inform the public of how tuberculosis is conveyed, and the importance of finding the disease in its early stages.

Doctors are urged to give the tuberculin test to the children in contact with an active case of tuberculosis, and to insist upon an X-ray for all reactors. It is interesting to note that as 1936 marks the fortieth anniversary of the discovery of the X-ray by Wilhelm Konrad Roentgen, this apparatus is now considered essential for accurate diagnosis of diseases of the chest.

Since tuberculosis still causes one out of every five deaths between the ages of 15 and 25, and Virginia ranks next to the highest in tuberculosis death rates in the Southern States (third in the U. S., resort states excluded), the Virginia Tuberculosis Association appeals to the physicians of the State

to exert the greatest vigilance in keeping all contacts of their tuberculous patients under careful observation. The lay tuberculous committees are doing what they can to lead people to seek medical advice in time to discover the disease in its incipiency. The diagnosis and treatment of the disease rests, as always, upon the physicians.

FREE BOOKLETS

In connection with this campaign the Virginia Tuberculosis Association offers free of charge to any physician in Virginia a copy of "Diagnostic Standards" and, while the limited supply lasts, a copy of "The History of Artificial Pneumothorax in America" by James J. Waring, M. D. Requests for either of these valuable booklets should be addressed to the Virginia Tuberculosis Association, 504 Atlantic Life Building, Richmond, Va.

Medical College of Virginia News.

Promotions on the major faculty for the session 1936-37 are as follows:

Dr. Rolland J. Main from assistant professor of physiology to associate professor of physiology.

Dr. William D. Suggs from associate in obstetrics to assistant professor of obstetrics.

Dr. Lawther J. Whitehead from associate in radiology to assistant professor of radiology.

Dr. W. L. Peple, resigned, was made emeritus professor of Clinical Surgery.

Dr. S. F. Bradel from assistant professor of Crown and Bridge Prosthesis and Dental Metallurgy to associate professor of Crown and Bridge Prosthesis and Dental Metallurgy. Dr. Bradel was also reappointed superintendent of the dental infirmary.

Dr. C. W. Morhart from associate in prosthetic dentistry to assistant professor of prosthetic dentistry.

Miss Lulu K. Wolf from assistant professor of nursing to associate professor of nursing.

Miss Aileen Brown from associate in nutrition and cookery to assistant professor of nutrition and cookery.

Dr. A. M. Wash in addition to his associate professorship of dental radiology, exodontia and anaesthesia, was made associate professor of oral surgery.

The honorary degree of Doctor of Science will be awarded Dr. Lawrason Brown, of Saranac Lake, New York, at the commencement exercises, June 2, 1936.

News from University of Virginia, Department of Medicine.

At the meeting of the University of Virginia Medical Society on February 17th, Dr. Alfred Chanutin spoke on the subject of Some Clinical Aspects of Lipoid Metabolism.

Dr. James Angus Doull, Professor of Hygiene and Public Health at Western Reserve University, visited the Medical School on February 27th.

On March 2nd, Dr. Arnold Rice Rich, Associate Professor of Pathology at the Johns Hopkins University, gave the mid-year Alpha Omega Alpha lecture, speaking on the subject of Immunity in Tuberculosis.

Dr. H. S. Diehl, Dean of Medical Sciences and Head of the Department of Preventive Medicine and Student Health Service at the University of Minnesota, was a recent visitor.

For the third consecutive year the Edward N. Gibbs Prize of the New York Academy of Medicine was awarded to Dr. Alfred Chanutin, Professor of Biochemistry. The stipend of the award is to be applied to a continuation of research on kidney diseases.

News from Duke University School of Medicine.

On February 24th and 25th, Dr. Edward R. Baldwin, Director of the Edward L. Trudeau Foundation for Research and Teaching in Tuberculosis, lectured to the faculty and students on The History of Tuberculosis Research in America.

The following seniors recently were elected to membership in the Alpha Omega Alpha honorary medical fraternity; George T. Harrell, Jr., and Joseph B. Stevens.

Dr. D. Hunter Marrow

Has returned to his home in Boydton, Va., after spending the winter at Daytona Beach, Fla., as has been his custom for some years.

Officers Elected for Children's Memorial Clinic.

Dr. Howard R. Masters was recently elected president of the Children's Memorial Clinic of Richmond, Va., for the coming year, and Dr. Charles

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L. Outland, vice-president. These and Dr. Lee E. Sutton, Jr., are among the newly elected members of the executive committee. Other doctors holding over as members of the board are: Dr. B. B. Bagby, Dr. Manfred Call, Dr. F. P. Fletcher, Dr. W. Brownley Foster, Dr. Ramon D. Garcin and Dr. St. George T. Grinnan.

The American Association on Mental Deficiency,

Composed of some 500 educators, psychologists, sociologists, and psychiatrists, is holding its sixtieth annual meeting at the Hotel Jefferson, St. Louis, Mo., on May 1st, 2nd, 3rd and 4th. The Friday sessions will be devoted to General and Sociological aspects of mental deficiency; the Saturday sessions to Psychological and Educational topics with special stress on Educational Disabilities. The Monday sessions will be given over to Research Activities, Medical Aspects and Administrative Problems in mental deficiency.

Some of the speakers are:

Popenoe on "Sterilization";
Goddard on "Social Security";
Hincks on "A National Program";
Kirkbride on "Public Welfare";
Hackbusch on "Social Service";
Vanuxem on "Education";
Berry on "Teaching Techniques";
Humphreys on "Research Problems";

and many others.

Everyone interested in the mentally defective or retarded child is cordially invited to attend these sessions. The complete program may be obtained from the Secretary, Dr. Groves B. Smith, Godfrey, Illinois.

Dr. John B. Bullard

Announces that he has resumed his practice in Richmond, Va., and has offices at 1614 Monument Avenue.

Dr. T. Dewey Davis

Was appointed general chairman of the annual early diagnosis campaign, sponsored by the Richmond Tuberculosis Association as a part of the nationwide program for the discovery of tuberculosis in its early and curable stages. Other local physicians associated with Dr. Davis on the committee are: Dr. Emily Gardner, Dr. P. D. Lipscomb, Dr. Kinloch Nelson, Dr. C. L. Outland, and Dr. Samuel A. Anderson, Jr. The services of many other doctors have been secured during the campaign.

Addition to DeJarnette Sanatorium.

Work on the $80,000.00 addition to the present DeJarnette Sanatorium at Staunton, Va., is to be commenced early this Spring. The new building will be designed to accommodate about one hundred patients.

Dr. Howard T. Holden,

Class of '34, University of Virginia, Department of Medicine, who is with the Civilian Conservation Corps, was recently transferred from Ravenswood, N. C., to CCC Co. 1462, Cosby, Tenn.

Dr. S. K. Ames,

Cape Charles, Va., has recently been elected one of the directors of the Chamber of Commerce of that town.

American College of Physicians.

The twentieth annual session of the College, held in Detroit the week of March 2nd, was well attended, there being present physicians from every State of the United States and many from Canada and some foreign countries. The following Virginians were present:

Dr. J. Morrison Hutcheson, Richmond, College Governor for Virginia.

Dr. and Mrs. Edward L. Alexander, Newport News.

Dr. Landon E. Stubbs, Newport News.
Dr. Alfred B. Hodges, Norfolk.
Dr. and Mrs. Walter B. Martin, Norfolk.
Dr. and Mrs. Wyndham B. Blanton, Richmond.
Dr. Paul D. Camp, Richmond.
Dr. and Mrs. Charles M. Caravati, Richmond.
Dr. and Mrs. Douglas G. Chapman, Richmond.
Dr. Dean B. Cole, Richmond.
Dr. T. Dewey Davis, Richmond.
Dr. William R. Graham, Richmond.
Dr. James N. Williams, Richmond.
Dr. John W. Preston, Roanoke.
Dr. Blanton P. Seward, Roanoke.
Dr. W. A. Murphy, Staunton.
Dr. Alex. F. Robertson, Jr., Staunton.

Dr. Ernest B. Bradley, Lexington, Ky., succeeded to the presidency and the following officers were elected: President-elect, Dr. James H. Means, Boston, Mass.; vice-presidents, Dr. O. H. Perry Pepper, Philadelphia; Dr. David P. Barr, St. Louis;

and Dr. Walter L. Bierring, Des Moines; secretary-general, Dr. William Gerry Morgan, Washington; treasurer, Dr. William D. Stroud, Philadelphia; and executive secretary, Mr. E. R. Loveland, Philadelphia. The last three named were re-elected.

The next session of the College will be held in St. Louis, April 19-23, 1937.

Tri-State Hospital Association of Virginia and the Carolinas.

The annual meeting of this Association will be held in the Hotel Chamberlin at Old Point Comfort, Va., April 16th-17th. Approximately 350 delegates are expected. Dr. Lewis E. Jarrett, Richmond, is president of the Virginia Hospital Association and will preside at the opening meeting of the joint session.

The Virginia Dietetic Association will also hold its annual meeting at the same time and place.

American Medical Association.

Official call has been issued for the eighty-seventh annual session of this Association in Kansas City, Mo., from May 11th to 15th. As usual, the House of Delegates will convene on Monday and sessions will be held at Hotel Muehlebach. The Scientific Assembly will open with the general meeting on Tuesday at 8:30 P. M. The majority of the scientific sessions, the scientific and technical exhibits and the registration bureau will be housed in the new Municipal Auditorium, which is a magnificent building, centrally located. Dr. J. Tate Mason, Seattle, Wash., President-elect, will be installed at the Tuesday evening session.

Dr. T. M. Parkins,

City coroner of Staunton, Va., since 1911, has been appointed by the city council as health officer of Staunton to succeed Dr. J. Fairfax Fulton. He entered upon his new duties early in March.

Dr. Lawrence T. Royster,

Professor of Pediatrics at the University of Virginia, addressed the Norfolk County Medical Society on March 23rd, his subject being "Acute Nephritis."

Dr. U. W. Massie,

Of the class of '30, Medical College of Virginia, who has been located for several years at Weeksbury, Ky., is in Brooklyn, N. Y., where he expects to be in training for sixteen months in ear, nose and throat work at the Brooklyn Eye and Ear Hospital.

Epileptic Colony to Have New Buildings.

It is expected that an early start will be made on the construction of two new buildings at the State Colony for Epileptics and Feebleminded. These are to cost $155,000, funds having been appropriated by the recent General Assembly. They will permit the segregation of tubercular patients and will provide better hospital facilities.

Married.

Dr. Walter L. Thomas, Jr., class of '31, University of Virginia, Department of Medicine, and Miss Maisie Denhold, Durham, N. C., March 10th. They will make their home in Detroit, Mich., where Dr. Thomas will be associated with the Henry Ford Hospital.

Dr. Meyer Cohen,

Formerly of Richmond, Va., and of the class of '31, Medical College of Virginia, has, with his consent, been ordered to active duty for six months with the Civilian Conservation Corps, and is stationed with CCC company 2365, near Westernport, Md. He is a first lieutenant in the Medical Corps Reserve.

For Sale—

Combination electric sterilizer unit, including instrument, water and dressing sterilizers. Address "Sterilizer," care VIRGINIA MEDICAL MONTHLY, Richmond, Va. (*Adv.*)

Laboratory Technician Wishes Position.

Laboratory technician, graduated in 1932, desires position in doctor's office, hospital or clinic, any location. Good references. Address "Technician," care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond, Va. (*Adv.*)

For Sale—

Burdick ultra-violet treatment lamp. A-1 condition. For information, write "Burdick," care this journal. (*Adv.*)

Obituary Record

Dr. Southgate Leigh,

Norfolk, Va., a former president of the Medical Society of Virginia and prominent in the professional

and civic life of Norfolk and Virginia, died March the 5th. He was attending a luncheon meeting of the Association of Commerce membership campaign, when he was stricken with a cerebral hemorrhage and was taken to the Sarah Leigh Hospital where he died a few hours later.

Dr. Leigh was born in Campbell County, Virginia, on May 21, 1864. Left an orphan at the age of twelve, he went to Norfolk to live with his aunt in whose memory the Sarah Leigh Hospital was later named. He graduated in medicine from the University of Virginia in 1888 and, going to New York for an internship, took the examinations at the College of Physicians and Surgeons in that city and was given an M. D. degree from that school in 1889. In 1893, he returned to Norfolk and took up the professional and civic career which he continued with distinction to the end. In 1903, Dr. Leigh opened the Sarah Leigh Hospital and in 1919, with a group of specialists, he established the Sarah Leigh Clinic. He was surgeon to several railways and was identified with a number of professional and civic organizations, in all of which he was an earnest and hard worker. He was a past president of the Norfolk County Medical Society and of the Tri-State Medical Association of the Carolinas and Virginia, and a founder, governor and fellow of the American College of Surgeons, and a member of many other organizations. In addition to having served as its president, he had represented the Medical Society of Virginia in the House of Delegates of the American Medical Association from 1916 through 1933, and had served on many important committees. He was also one of the prime movers in the organization of the Woman's Auxiliary to the State Society. He had lived a full life and will be missed in many organizations.

Dr. Leigh is survived by his wife, two sons and two daughters.

The following appreciation and resolutions were adopted by the Norfolk County Medical Society:

Your committee wishes to acknowledge with deep sorrow the passing of our esteemed fellow member, Dr. Southgate Leigh. The community of Tidewater Virginia and the medical profession at large has lost one of its most outstanding members.

The Leigh's have been natives of Tidewater Virginia for generations, but Dr. Leigh was born in Lynchburg, Va., May 21, 1864, because his father, who was in the Confederate Army, was stationed at Lynchburg at that time. He returned to Norfolk at the close of the war, where he has resided ever since. He attended a school under the instruction of Mr. Galt, of Norfolk, and from there went to the Episcopal High School at Alexandria, Va. After graduation he entered the University of Virginia, from which he received his medical degree in 1888. Following this, he entered Columbia University, College of Physicians and Surgeons, where he received the degree of Doctor of Medicine after completing a competitive examination. In 1889 he entered Mt. Sinai Hospital and served an internship of two and a half years. After completing his internship, he went to the Clinics of Europe, doing postgraduate work in Vienna and specializing in obstetrics and gynecology. Returning from abroad, he went back to Mt. Sinai Hospital and indulged in special work with Dr. Gerster regarding antisepsis. In 1893 he returned to his home in Norfolk, Va., where he took up the practice of medicine and surgery, to which he gave the very best that was in his power and soon attained an outstanding prominence among his colleagues.

Realizing the need for a private hospital in Tidewater Virginia, he built the Sarah Leigh Hospital, which was opened in 1903, and of which he has been chief surgeon, president and owner. This hospital has served the city of Norfolk, Tidewater Virginia and eastern North Carolina since its opening.

Dr. Leigh's career in his profession has been a brilliant one. He has given unstintingly of his time and energy to the advancement of medical and surgical science and to the medical profession and public generally. He consistently stood for all that was best, both for the profession and the public. He lived the life laid down by the oath of Hippocrates and these principles carried him to the zenith of his chosen profession. Equally, also, has he reached the same high pinnacle in community work and Norfolk will long miss his civic efforts. He gave, with the utmost abandon for himself, of his time, energy and worldly goods.

He became deeply interested in surgery and no matter what encouraging reports of new methods of treatment, his were always along conservative lines. His early training and practice, combined with his many innate faculties, soon developed in him a high degree of efficiency as a surgeon. In later years he became deeply interested in cancer education and cancer control.

He was a member of numerous medical societies, president of several and a past president of the Norfolk County Medical Society. He was one of the founders of the American College of Surgeons and has been a member of the Board of Governors of the College.

The sudden death of Dr. Leigh was a great shock to the entire community and his passing is mourned by countless grateful patients, friends and devoted colleagues and co-workers. He leaves a wife and four children.

Therefore, BE IT RESOLVED, that in the death of Dr. Southgate Leigh the Norfolk County Medical Society has sustained an irreparable and distressing loss.

BE IT FURTHER RESOLVED, that a page in the minute

book of this Society be set aside and dedicated to his memory and that a copy of these resolutions, with expression of our deepest sympathy, be presented to his family and to the VIRGINIA MEDICAL MONTHLY.

STANLEY H. GRAVES, *Chairman,*
FRANK H. REDWOOD,
F. C. RINKER,
Committee.

Dr. Samuel I. Conduff,

Well known physician of Roanoke, Va., died on March 19th, at the University of Virginia Hospital. He was born in Floyd County, Virginia, sixty-two years ago and graduated in medicine from the Baltimore Medical College in 1898. Dr. Conduff was identified with his local and State medical organizations and was especially interested in diseases of children. He is survived by his wife, a son, and several sisters and brothers, one of these being Dr. Chas. E. Conduff, of Roanoke.

Dr. Willcox Ruffin,

Prominent young surgeon of Norfolk, Va., died February 28th, of complications following gunshot wounds accidentally inflicted when a shotgun fell and was discharged by the impact with the floor, the shot entering both heels. He was thirty-five years of age and was the son of Mrs. Mary Dunn Ruffin and the late Dr. Kirkland Ruffin. He received his M. D. degree from the University of Virginia in 1926. Dr. Ruffin was on the staff of the Norfolk Protestant and St. Vincents' Hospitals and was very active in the clinic work of both hospitals. His wife and two children survive him.

Upon call of the vice-president, the members of the Norfolk County Medical Society duly assembled and the following resolutions were drawn and adopted:

Whereas, in the passing from this life of our friend and colleague, Dr. Willcox Ruffin, be it resolved:

1. That we the members of this Society deeply regret, and hereby express our profound sorrow at the untimely death of our friend and colleague.

2. That he was highly esteemed by his many friends and colleagues, because of his numerous endearing and lovable attributes of character and manner.

3. That he was highly regarded by his colleagues, because of his skill, ability and energy, which was constantly evidenced in his all too brief professional career.

4. That we keenly feel his immediate loss, and recognize that his loss to our profession, in the future, will be even greater.

5. That we wish to express to his sorrowing family our sincere and heartfelt sympathy in their deep loss and bereavement.

6. That these resolutions shall be spread on the minutes of this Society and that a copy be forwarded to his bereaved family as a memorial of our esteem, love and affection.

CHAS. W. DOUGHTIE, *Chairman,*
W. ARTHUR PORTER,
ROBERT DUVAL JONES, JR.

WILLCOX RUFFIN

OCTOBER 2, 1900—FEBRUARY 27, 1936

On a bleak December day, at the close of the year, while the barren trees were wrapped in garments of ice, we bore to its last resting place the form of a colleague who for many decades had lived and wrought for the advancement of his profession, the betterment of man and the glory of God; his cup full and overflowing with the acclaim of his fellows. Death was the crowning glory of a fruitful life.

As the first signs of spring were manifest about us, proclaimed by many sweet-voiced birds, we bore to the same resting place the body of the young son who was cut down as he stood upon the threshold of life looking forward to a future rich in promise. Magnificent in physique, brilliant in intellect, lovable in personality he gave promise of service of high order.

We see in this one of the mysteries of life as we voice a prayer that we doubt not the wisdom of God's plan respecting man.

BE IT RESOLVED by the Staff of the Norfolk Protestant Hospital that we give expression to the high regard in which we held Willcox Ruffin both for personal charm and professional attainment.

RESOLVED FURTHER that a copy of these resolutions be entered upon our minutes, published in the VIRGINIA MEDICAL MONTHLY and sent to the bereaved family.

L. F. MAGRUDER,
ROBERT DUVAL JONES, JR.,
W. ARTHUR PORTER.

Dr. Rawley Martin Shelton,

Of Unionville, Va., died at his home in that place on March 15th, after a short illness of pneumonia with complications. He was a native of Pittsylvania County, Virginia, and sixty-five years of age. After graduation from the University of Virginia, Department of Medicine, in 1887, he practiced both in Pittsylvania and Brunswick Counties before moving to Unionville in 1927. He was prominent in his section and had been a member of the Medical Society of Virginia for thirty-four years. His wife and several children survive him.

Dr. Addison Barrett Householder,

Well known physician of Lovettsville, Va., died March 20th, following a heart attack. He was sixty-

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six years of age and received his medical degree from the University of Maryland in 1893. Dr. Householder had practiced in Lovettsville since his graduation and was a member of the Masonic Lodge of that place, in addition to holding membership in several other fraternal organizations. He had been a member of the Medical Society of Virginia since 1910. His wife and a sister survive him.

Resolutions on Death of Dr. Walker Campbell.

The Hanover County Medical Society at its March meeting, expressed the following appreciation of Dr. Campbell:

Dr. W. A. Campbell, of Old Church, Va., passed from our midst on January 21, 1936. He had practiced his profession in this vicinity for the last thirty-three years, having graduated from the former University College of Medicine, Richmond, Va., in 1903.

We shall miss him and we take this opportunity to pay homage to his character and abilities and to extend to his family our heartfelt sympathy.

HANOVER COUNTY MEDICAL SOCIETY,
J. A. WRIGHT,
J. T. VAUGHAN,
Committee.

Dr. William Holland Wilmer,

Nationally known eye specialist, died at his home in Washington, D. C., on March 12th, death being due to heart trouble. He was born in Powhatan County, Virginia, in 1863, and graduated in medicine from the University of Virginia in 1885, later studying in several American and foreign hospitals. During the World War, Dr. Wilmer was surgeon in charge of the medical research laboratories of the A. E. F. in France. In 1922, a group of friends, with the cooperation of the Rockefeller Foundation and the Commonwealth Fund, raised nearly $4,000,000 for the erection and endowment of the Wilmer Ophthalmological Institute in connection with Johns Hopkins University and the University Hospital at Baltimore, Md. Dr. Wilmer was made director of this and held the position until 1934 when he returned to private practice in Washington, where he had begun his medical career. Two sons and a daughter survive him.

Dr. Claudius Pugh Hutchison,

Purcellville, Va., died March 5th, after a brief illness of pneumonia. He was sixty years of age and a graduate of the Georgetown University School of Medicine in 1899. He was a member of the Loudoun County Medical Society and a director of the Round Hill National Bank. His wife and two daughters survive him.

Dr. James Braxton McKee,

Glade Spring, Va., died on March 17th, at the age of seventy-six years. He studied medicine at Vanderbilt University, Nashville, Tenn., from which he graduated in 1891. Dr. McKee had been in practice for fifty-two years and had been a member of the Medical Society of Virginia for a large part of this time. He is survived by three children and a number of relatives, including a brother, Dr. T. K. McKee, of Saltville.

Dr. Charles Curtis Page

Died at his home in Richmond, Va., on March 8th, after having been in bad health for several years. He was a native of Gloucester County, Virginia, and seventy-two years of age. Dr. Page received his medical education at the University of Virginia from which he graduated in 1886. He practiced for a time in New York City and later at Orange, Va. He retired from practice when he moved to Richmond several years ago. His wife, several brothers and sisters survive him.

Dr. Peyton Paige Nottingham

Died suddenly at his home near Ferrum, Va., March 10th. He was a native of the Eastern Shore of Virginia and fifty-five years of age. After studying at the Medical College of Virginia, he went to the University of the South at Sewanee, Tenn., from which he graduated in 1904. He practiced for some years in Isle of Wight County, Virginia, and moved to Ferrum about a year ago. His wife and a son survive him.

Mr. Edgar Sydenstricker,

Widely known as a consultant in public health and as the author of treatises on economic problems, died at a hospital in New York City on March 19th. Since 1928, he had been director of research for the Milbank Memorial Fund, New York City. He is well remembered by Virginia doctors as having taken part in the discussion on Medical Economics at the meeting of the Medical Society of Virginia in Alexandria in 1934.

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